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THE OIL WEEKLY

OIL & GAS ENGINEERING

News Statistics

JUN 19

B-J
CENTER-LATCH
ELEVATOR

Imitations of this elevator will never deceive those who have used it. For the protection of others it has been fully patented.

BYRON JACKSON CO.

Tulsa LOS ANGELES New York

May 1, 1931

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EDITORIAL INDEX, PAGE 21

Added PROTECTION

SHIELDED from the fiery rays of the sun—protected against sudden changes from the intense heat of day to the raw, shivering, cold of night—Parkersburg Vapor-Tight Tanks stand guard over costly contents, defeating the thief of evaporation.

Gas-tight tanks were pioneered by Parkersburg and perfected by Parkersburg improved valves. In active oil fields everywhere, Parkersburg Quality, Bolted Steel Tanks —Aluminum-Coated—equipped with Parkersburg Vapor-Pressure Fittings, bring definite economies by maintaining the gravity of the crude. In corrosive districts, Parkersburg all-aluminum, and aluminum-steel composite tanks, are successfully combating the corrosive effects of hydrogen sulphide.

Parkersburg is equipped to furnish Tanks in sizes ranging from 30 to 10,000 barrels from stock, in all the principal Mid-Continent and Gulf Coast districts, and efficient erection crews are in readiness at all times to answer any call for service.

A phone call to the nearest Parkersburg Branch will bring tanks and crews without delay.

FROM DERRICKS TO TANKS

QUALITY AND SERVICE

THE PARKERSBURG RIG AND REEL CO.

PARKERSBURG, W. VA.

NEW YORK • TULSA • FT. WORTH • HOUSTON

BRANCHES IN ACTIVE FIELDS

CABLE ADDRESS "PARIGREEL"

This Seal of Quality and Service on Parkersburg Equipment is Your Guarantee.

THE PARKERSBURG RIG AND REEL CO.

TRADE MARK REG.

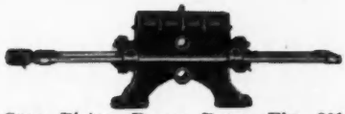
The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879

The Varied GASO Line Includes correctly designed Equipment for Every Pumping Requirement

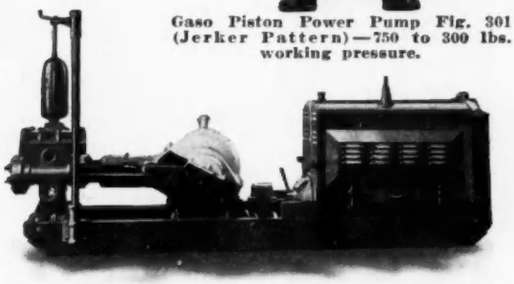
GASO PUMP & BURNER MFG. CO. ..... TULSA, OKLA.

Gaso Portable Pumping Plant Fig. 2010-W for emergency, temporary and semi-permanent service. Capacities from 63 to 250 bbls. per hour at 800 to 250 lbs. working pressure.

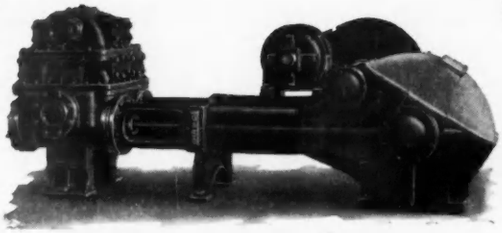
Gaso Rodline Pump Fig. 201—a simple, easily operated pump for general service.



Gaso Piston Power Pump Fig. 301 (Jerker Pattern)—750 to 300 lbs. working pressure.



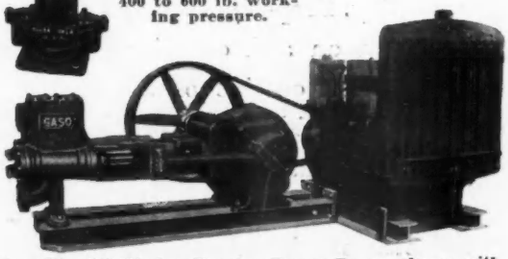
Gaso Portable Pumping Plant Fig. 2010-S—Same pump and power plant as Fig. 2010-W, except mounted on steel skids.



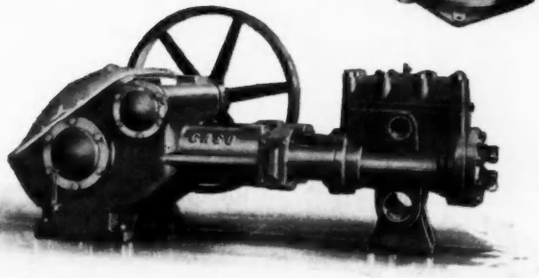
Gaso Fig. 1931 Timken Bearing Suction Pump. Interchangeable liners from 6 to 10" and 18" stroke. Also suitable for low pressure discharge service.

Gaso Walking Beam Pump Fig. 601 for Oil or Water—for 400 to 600 lb. working pressure.

Gaso Walking Beam Pump Fig. 604 for Gas or Vacuum—gives 26 to 28 points vacuum.



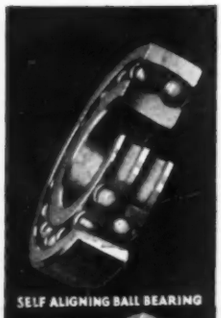
Gaso Fig. 710 Timken Bearing Power Pump, shown with V-Rope drive from Buda M.A.N. High Speed Diesel Engine. Capacities from 54 bbls. per hour at 1400 lbs. pressure to 500 bbls. at 300 lbs.



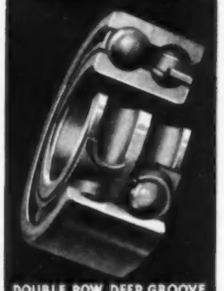
Gaso All Timken Bearing Power Pump Fig. 1508. Capacities from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. at 250 lbs. Arranged for any type of drive.

GASO PUMPS

for every oil industry need


SELF ALIGNING BALL BEARING

DEEP GROOVE BALL BEARING


DOUBLE ROW DEEP GROOVE BALL BEARING

CYLINDRICAL ROLLER BEARING

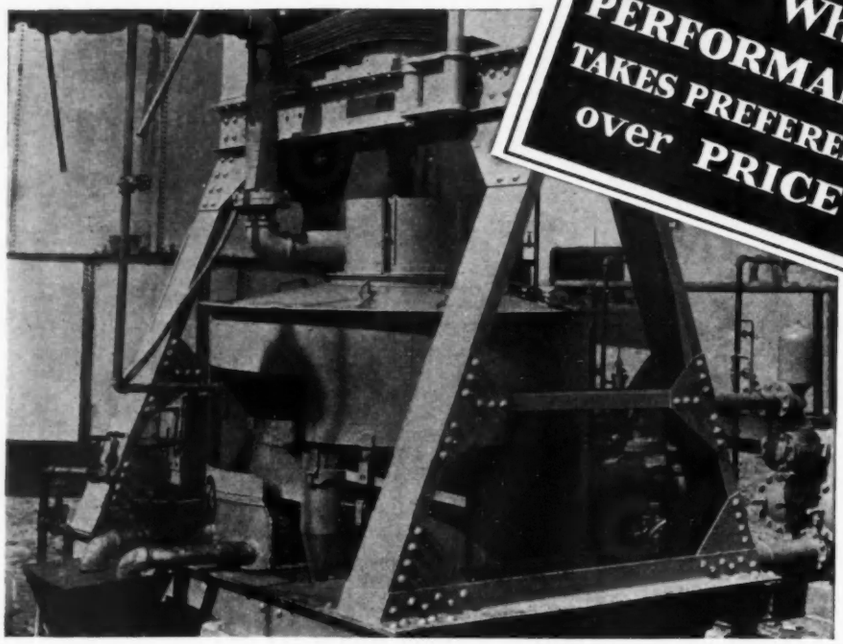
SPHERICAL ROLLER BEARING

ALIGNING THRUST BEARING

MERCO CENTRIFUGAL SEPARATOR CO., Ltd.

Another prominent user of **SKF** *Bearings in the Oil Industry*

Where PERFORMANCE TAKES PREFERENCE over PRICE



LONG HOURS AND EXPOSURE NO HANDICAP FOR SKF'S

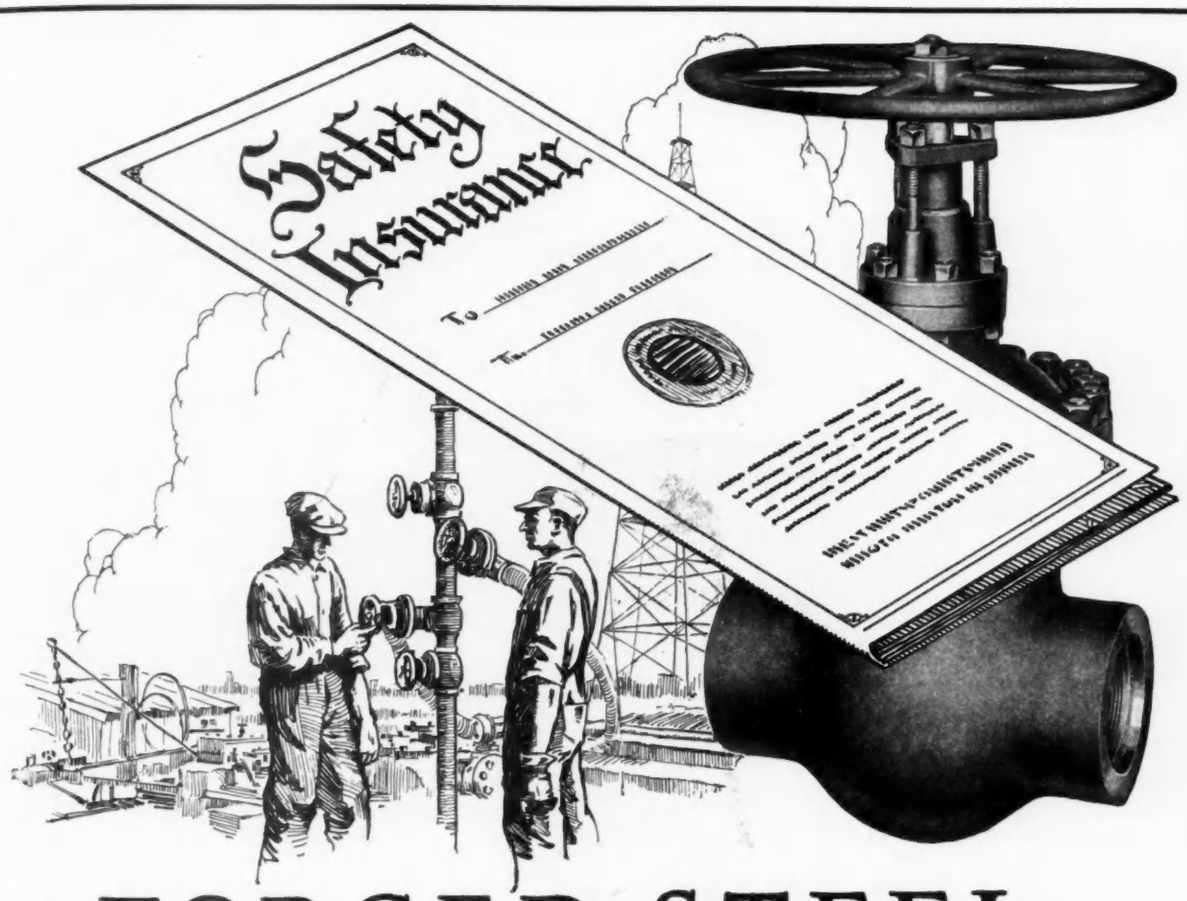
CONTINUOUS operation... plus a maintained high capacity . . . these are the features which Merco stresses on their Centrifugal Separator for the oil industry. To sustain such a high standard of performance ... SKF is *the Selected Bearing*, for the main spindle.

Despite exposure to the elements and the unrelenting demand for constant service, SKF Bearings never fail to meet production requirements day after day. Properly housed, SKF's run on and on with little attention outside of an occasional replenishing of lubricant. And the fact that these bearings show no wear, require no adjustments, is reflected in the efficiency of the separator.

SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y.

SKF

2709



FORGED STEEL
affords your men protection

ANYBODY experienced with the conditions of high pressure fields knows the hazards of their working conditions. It behooves the operator to protect the lives of his men and control of well, as far as possible.

This can be done best in the Gate Valves by using the new Darling Forged Steel Valve. It is the strongest valve that can be made, built for working pressures up to 3000 lbs. The very nature of forged steel eliminates the defects which may lie hidden until the unexpected emergency arises.

The Darling Forged Steel Valve is ideal for Well Control, Flow Lines, Pipe Lines and any other places of hazardous control.

Made in Screwed Ends, Flanged Ends and Flanged Ends with Companion Flanges bolted on.

DARLING VALVE & MANUFACTURING COMPANY
WILLIAMSPORT, PA.

NEW YORK LOS ANGELES OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:
Frick-Reid Supply Corp. International Supply Co.

Foreign Sales Manager
H. M. HEIN
Room 1405, 152 West 42nd Street
New York, N. Y.

DARLING
GATE VALVES

A SOLID FRONT AGAINST ABRASIVE ATTACK...

Like an impregnable battle line, **BLACKOR** presents a solid front that resists abrasive attack and cannot be cut off. No matter where abrasion strikes, it finds **BLACKOR** on guard!

The entire surface of your BLACK-OR-ED drilling tool is abrasion-resistant . . . not just spots here and there as in the case of inserts with exposed surfaces which are soon captured by abrasion. The solid **BLACKOR** surface is more abrasion-resistant than if the entire surface were packed solid with inserts.

Unlike any other hard facing, **BLACKOR** bonds with the steel of the tool, actually becoming a part of the tool instead of merely "sticking" to the outer surface. This close bond with the steel prevents chipping or breaking off in the hole.

Note the solid front of abrasion resistance presented by BLACKOR. Absolutely no weak spots that can be worn down by abrasive attack.

BLACKOR

STEEL

...THE HARDEST FIGHTING FACING IN THE WORLD!

BLACKOR fights abrasion longer and harder than any other hardfacing or insert material. Its solid cutting face can be of any desired shape or hardness and outwears ordinary hardfacings and inserts from 3 to 5 times. It helps dig more hole, faster!

BLACKOR is economical, too! So hard that it requires the carbon electric arc, **BLACKOR** can be applied 10 times cheaper than other materials which require oxy-acetylene...a tremendous saving that is multiplied in isolated fields. Turn a switch and you're ready to apply **BLACKOR**. Power cost is only 10 to 20 cents per hour. No heavy tanks to handle. High quality, low price and other economies make **BLACKOR** the **LOWEST COST SUPER HARD FACING METAL IN THE WORLD.** Put it on your tools and note the difference.

BLACKOR COMPANY

13007 South Main Street
LOS ANGELES, CALIFORNIA

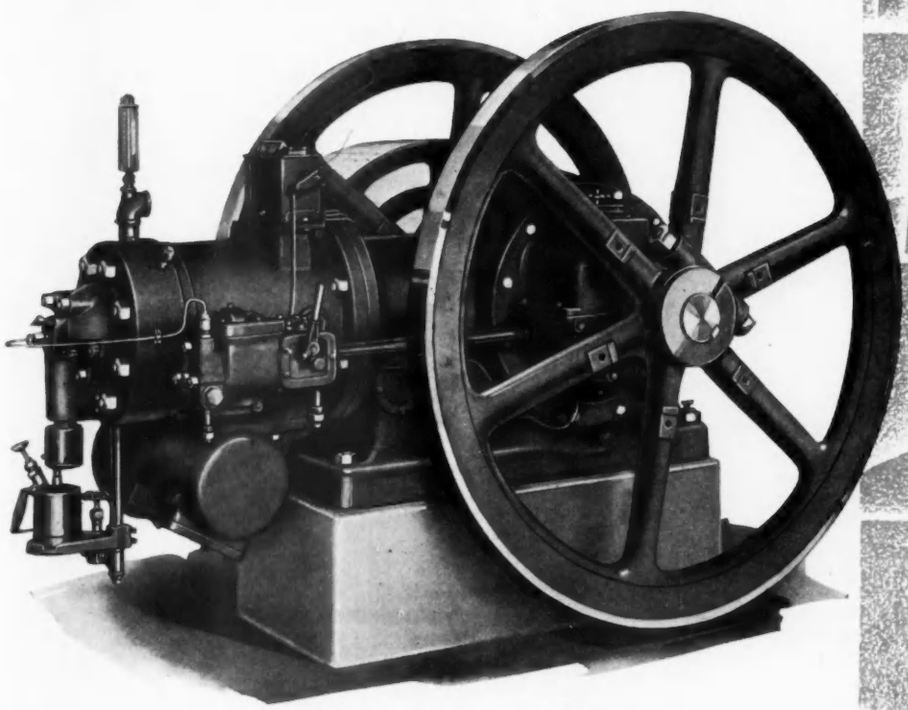
BLACKOR

The Super Abrasion-Resistant Facing

REMEMBER THE 25 Y

MANUFACTURED BY

FAIRBANKS-MORSE



Fairbanks-Morse 25 HP Type Y Style HB Oil Engine

The dependability of this engine is borne out by its record. Nearly every production man is familiar with the 25Y, for many years the outstanding engine of its type and size. Nearly 2000 of these engines and the preceding model were placed in beamwell service in the fields surrounding El Dorado, Kansas, alone.

"If Continental Sells It....There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: ST. LOUIS
THE CONTINENTAL SUPPLY CO., LTD.
224 Traders Building, Calgary, Alberta, Canada
Export Offices: CONTINENTAL EMSCO CO., INC.
74 Trinity Pl., New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2
CONTINENTAL EMSCO S. A. R.
7, Strada Eminescu, Ploesti, Romania

CFM-3

CONTINENTAL

This Advertisement Appeared in The Saturday Evening Post a Decade Ago

THE SATURDAY EVENING POST 119

James Watt Had the Right Idea

DISCOVERING the wonderful power of steam was only one of James Watt's contributions to science. His genius revolutionized engine building.

It was he who, in 1774, circled the engine piston with a flexible band of metal—to stop the leaking power. Pistons had always been "packed" with hemp—a flimsy makeshift.

In these early days, the metal rings were *hammered* by hand to get *permanent, equal pressure* against the cylinder walls.

American Hammered Piston Rings

are hammered by machinery to obtain absolute accuracy for modern motor construction.

But they retain the basic *hammering* principle—tried and proved in spite of fad or fancy.

They are fundamentally right.

...gineers say— ...iston Rings!"

HUNDREDS of millions of American Hammered Piston Rings have been used by engine builders and operators in every part of the world since this advertisement appeared. The fundamentals of mechanics do not change. Watt, a century and a half ago, had the right idea. Our modern Foundry and Machine Shop enable us to use the Hammered principle scientifically and manufacture to standards of accuracy that Watt never dreamed of.

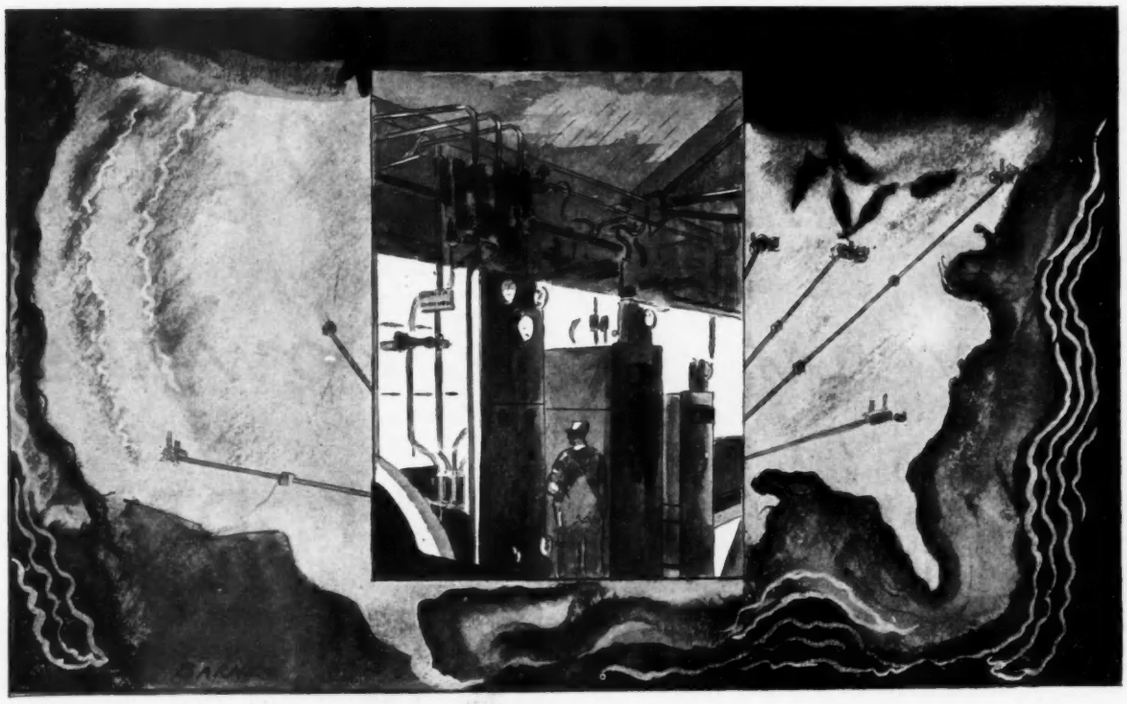
Endorsed and Used as Factory Equipment by

Ajax Iron Works - - - Corry, Pa.
Atlas Diesel Co. - - - Oakland, Cal.
Bruce-Macbeth Eng. Co., Cleveland, Ohio
Bovaird & Seyfang Mfg. Co., Bradford, Pa.
Bradford Supply Co. - Bradford, Pa.
Clark Bros. - - - Bradford, Pa.
Cooper Bessemer Corp., Olean, N. Y.
Mount Vernon, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Dew Pump & Engine Co., Oakland, Cal.
Franklin Valveless Eng. Co., Franklin, Pa.
I. P. M. and De La Vergne Machine Co., Philadelphia, Pa.
Ingersoll-Rand Co., New York, N. Y.
McIntosh & Seymour Corp., Auburn, N. Y.
Muncie Oil Engine Co., Muncie, Ind.
National Supply Co. - - Toledo, Ohio
Pennsylvania Pump & Compressor Co., Easton, Pa.
Power Mfg. Co. - - - Marion, Ohio
Jos. Reid Gas Eng. Co., Oil City, Pa.
Sullivan Machinery Co., Michigan City, Ind.
Titusville Iron Works, Titusville, Pa.
Wilson Snyder Mfg. Co., Pittsburgh, Pa.
Worthington Pump & Mach. Corp., New York, N. Y.

Can be Obtained in Standard and Oversizes from the Above Companies or their Selling Agents.

American Hammered Piston Rings

IN EVERY SIZE • OF EVERY TYPE • FOR EVERY PURPOSE



PULSING OIL

ACROSS A CONTINENT

NO BARRIER is too great where the needs of industry are concerned. Force created in relentless turbo-generators keeps oil pulsing across the continent, over mountains, beneath rivers, through swamps . . . . that the wheels of industry may turn. Pipe lines reach north to Parco, Wyoming; south to Gulf Coast cities in Texas; and east to Bayonne, New Jersey. They contain more than 18,000,000 barrels of oil at all times.

In the Gulf Coast area, as well as in other parts of the nation, the advantages of electric power are being realized more and more by pipe line executives.

GULF STATES

UTILITIES COMPANY

General Offices

BEAUMONT, TEXAS LAKE CHARLES, LA.

Industrial plants everywhere now use

DAYTON COG-BELT DRIVES

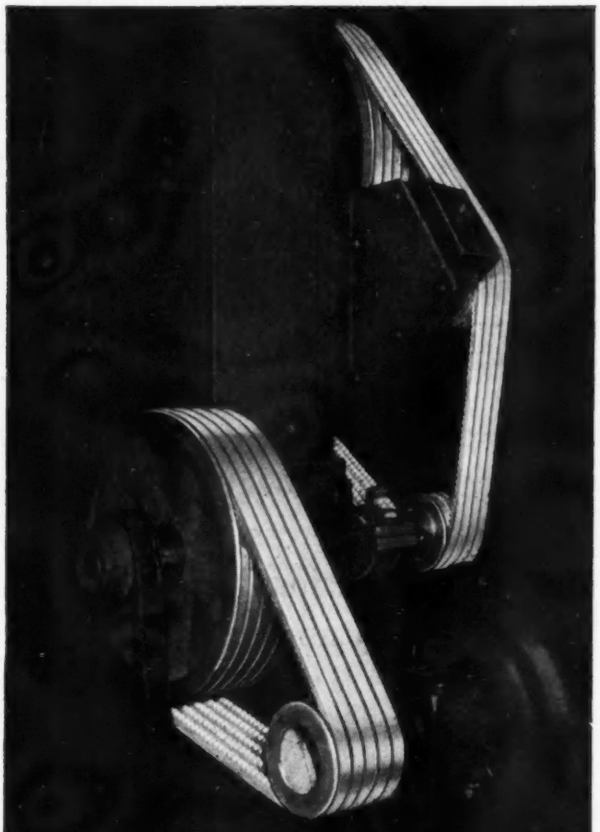
...FOR GREATER EFFICIENCY
...FOR LONGER LIFE

Daytons will take care of any power transmission job, large or small, with more efficiency, at less expense and for a longer time than any of the old-fashioned drives. Thousands of industrial users, from the smallest operators to the largest manufacturing establishments, will verify this. ● If you are troubled with delays and shut-downs due to faulty power transmission, throw out the old-fashioned drives and *install Dayton Cog-Belt Drives.* ● If you are troubled with noise and vibration, *install Dayton Cog-Belt Drives.* ● If you're constantly replacing or repairing belts, or servicing them with dressings, *install Dayton Cog-Belt Drives.* ● For Dayton Cog-Belt Drives will correct all of these troubles. You owe it to yourself—to your business—to investigate. Get all of the facts about Dayton Cog-Belt Drives. Send for a Dayton Cog-Belt Drive catalog and a sample section of the belt itself. Write today.

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON, OHIO

Factory Distributors in principal cities and all Westinghouse Electric & Mfg. Co. Sales Offices

O-133



COMPLETE DRIVES—PULLEYS AND BELTS—IN STOCK. ALL RATIOS, 2 H. P. TO 100 H. P.

Dayton COG-BELT DRIVES

OUTSTANDING ADVANTAGES OF DAYTON COG-BELT DRIVES

1. Minimum space required. **2.** Positive speed. **3.** Rugged . . . long-lived. **4.** Smooth starting and running. **5.** Vibration eliminated. **6.** Less maintenance. **7.** Less adjustment. **8.** Quiet. **9.** Clean. **10.** Easy on bearings.

DAYTON COG-BELTS ARE "BUILT TO BEND"

▼ WHERE ▼

CORROSION

IS A PROBLEM

Wrought-iron is effective against corrosion and in actual service has proved its economy in reducing the heavy toll of "hot spots". Byers Genuine Wrought-Iron Pipe is the standard of wrought-iron quality, and experience indicates the places where its use will create balanced pipe lines which adequately meet varying soil

BYERS • GENUINE • WROUGHT-IRON PIPE

conditions. Where corrosion is a problem, there's a place for Byers Genuine Wrought-Iron Pipe in any "pipe prescription". New things are being learned all the time about corrosion, and constant and widespread study of it equips our engineers to give you expert and up-to-date counsel. A. M. Byers Company, Pittsburgh, Pa. Established 1864.

AN INVESTMENT - NOT AN OUTLAY

Just Off the Press

PETROLEUM DICTIONARY

for

Office, Field and Factory

by

HOLLIS P. PORTER

Member of

American Society of Mechanical Engineers.
American Petroleum Institute.

FIRST EDITION

Before deciding to publish this dictionary, a thorough search was made by the author while preparing lectures to be delivered to the students of the Petroleum Engineering School of The University of Tulsa, which revealed that there was no publication which defined in a satisfactory manner many of the words and terms used in the several departments of the petroleum industry. It was also observed, that many employees in offices were in need of a ready reference which would give them some light as to the meaning of technical as well as non-technical expressions, and words so often found in correspondence by and between individuals of the several departments of the industry. These facts furnished the inspiration for this publication. It is often difficult, and in many cases impossible, even with the best library facilities to find definitions for many of the words which have recently been introduced. This may cause some difficulty in understanding the meaning to one unfamiliar with the subject, or, to a particular branch of the industry.

This dictionary is offered to those who are employed or interested in the petroleum industry for the purpose of removing this difficulty.

234 Pages — Cloth —Six by Nine Inches

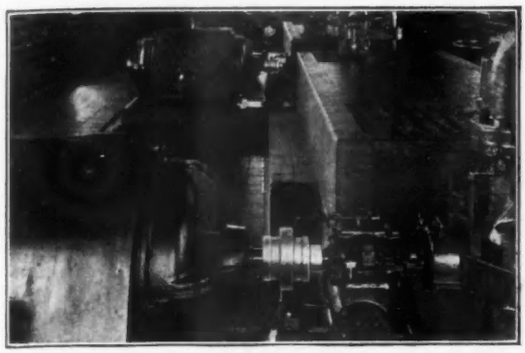
Price $3.00

Send order to the

GULF PUBLISHING COMPANY

P. O. Box 1307 Houston, Texas

Coupling Replacements Banished



Fast's Flexible Coupling installations at the Main Pumping Station of the Pure Van Pipe Line Company, Van, Texas.

-- *no Flexible Pins or Springs*
-- *no Perishable Felt Washers*

FAST'S MECHANICAL FLEXIBILITY

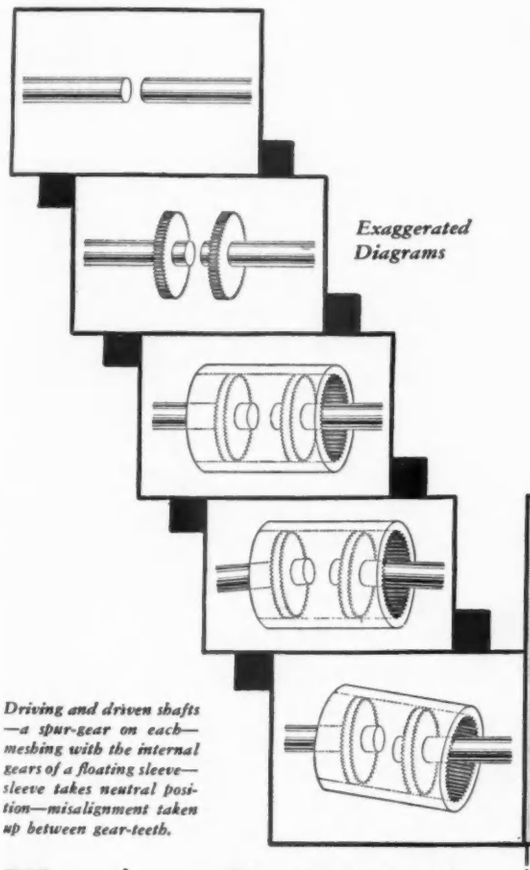
THE diagrams tell the story. Instead of depending upon flexible materials for flexibility, all forms of shaft misalignment are compensated for between the lubricated faces of the gear teeth.

And better still, Fast's Coupling is "double-engagement." Misalignment is divided between two sets of gear teeth, the center sleeve taking a neutral position. *Only* by "double engagement" can *all forms* of misalignment be taken care of without damaging stresses and crank-action in the connected shafts and bearings.

PERMANENTLY DUST PROOF

Oil carries the load between the gear teeth, due to capillary and centrifugal action produced in rotation. And this oil is permanently clean and free from moisture, dust, and grit. All-metal *bearing rings* seal the sleeve. No washers, no makeshifts. Permanent and definite seal makes Fast's Coupling (when oiled like any other equipment) last as long as connected machines.

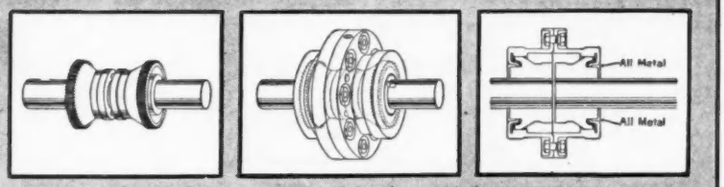
Fill in and mail the coupon below. It will bring you the new bound catalog of Fast's Self-Aligning Couplings and their application to your problem.



Exaggerated Diagrams

Driving and driven shafts —a spur-gear on each— meshing with the internal gears of a floating sleeve— sleeve takes neutral position—misalignment taken up between gear-teeth.

Dust-Proof - - And Stays Dust-Proof



Two hubs carry generated gears. *Internal teeth of sleeve mesh with hub gears.* *All metal bearing-rings permanently exclude dust and grit.*

FAST'S
Self-Aligning
COUPLINGS
NO FLEXIBLE MATERIALS

THE BARTLETT HAYWARD CO.
217 Scott Street » « Baltimore, Md.

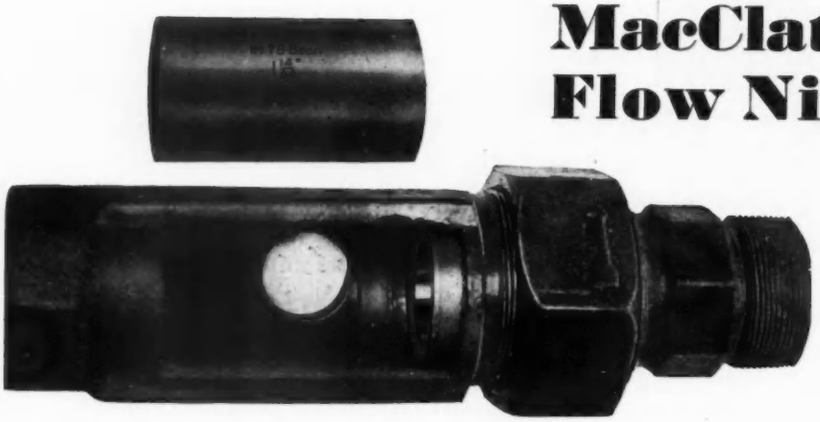
Send me free bound copy of Fast's Self Aligning Coupling Catalog showing varieties of designs and installations, and containing valuable data on coupling installation.

Name _____

Firm Name _____

Address _____

LOW *initial* COST
and Low Upkeep with
The MacClatchie Flow Nipple



Mr. W. C. WHALEY

General Superintendent of the

Barnsdall Oil Co. of California

Reports that the MacClatchie Flow Nipple Demonstrated the Following Advantages Over Other Makes of Flow Devices in Recent Tests Conducted by His Company:

—Lower in First Cost.

—Only Cost One-half as Much for Upkeep.

—Easy and Quick to Change.

—Made less tight emulsion and lasted longer in sand.

—When pack hardened lasted twice as long.

—Pressure Gauge gives warning of gradual wear of Bean, thereby permitting replacement before pressure drops to a harmful point.

In the New

EAST TEXAS FIELD

You will find the

MacCLATCHIE FLOW NIPPLE

the choice of many leading operators

Beans are interchangeable on any size nipples.

MacCLATCHIE

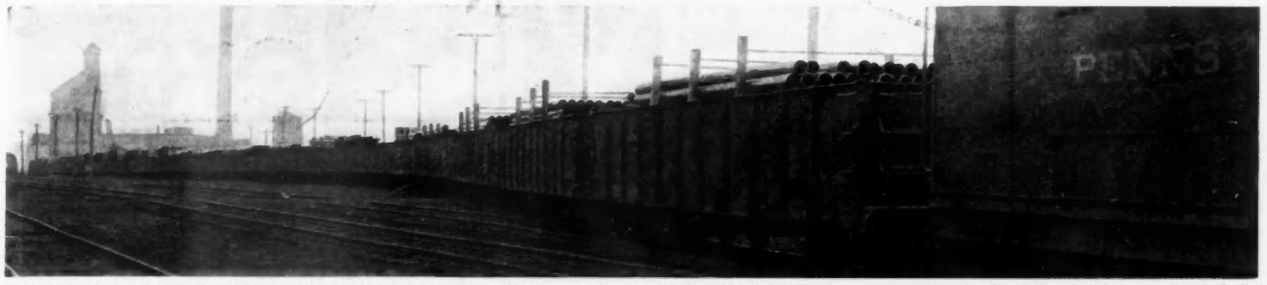
MANUFACTURING COMPANY, COMPTON, CALIFORNIA

Branches in Houston, Texas; Ventura and Bakersfield, Calif.

Flow Nipples stocked by all leading supply houses.

CONVINCING EVIDENCE OF CHESTER'S POPULARITY

PART OF 100 MILE LINE — NOT A LEAK DEVELOPED



SIMILAR REPORTS ON MANY OTHER LINES FURNISHED 10-50-100 MILES AND LONGER

Field test on the one hundred mile line, of which these trainloads were a portion, demonstrated the free welding qualities of South Chester Pipe resulting from extreme care in selection of raw material and the freedom from crystallization and lamination so important in welded lines.

The unusual care which South Chester gives to Crusher Tests and all other tests and inspections makes for satisfactory service in the line.

Chester also makes all classes of Genuine Wrought Iron Tubular Goods and Copper Bearing Steel Pipe.

SOUTH CHESTER TUBE COMPANY
Chester, Pa.

CHESTER

STEEL SPECIALISTS IN CASING FOR DEEP WELL DRILLING **CASING**

LINE PIPE

District Sales Managers:

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H. A. MORSE, 30 Church St., New York City, N. Y.

J. P. COONEY, 715-716 A. G. Bartlett Bldg., Los Angeles, Calif.

J. P. STEELE, 305 Petroleum Bldg., Fort Worth, Texas.

District Offices:

J. D. SWARTZ—1231 S. Evanston Street, Tulsa, Okla.

E. L. MOSELEY—2218 Mills St., Houston, Texas.

District Warehouses: Houston, Tex.; Thenard, Calif.; 180 Townsend St., San Francisco, Calif.

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PRICHARD SUPPLY CO., Mannington, W. Va.; Mather and Waynesburg, Pa.

LeVALLEY, McLEOD, KINKAID CO., INC., Elmira and Olean, New York.

KANE SUPPLY CO., Kane, Lawrenceville, Brookville, Pa.

PELICAN WELL TOOL & SUPPLY CO., Shreveport, La.

UNITED OIL WELL SUPPLY CO., 712 A. G. Bartlett Bldg., Los Angeles, Calif.

GREAT NORTHERN TOOL & SUPPLY CO., Billings and Kevin, Mont.; Kemmerer and Cody, Wyo.

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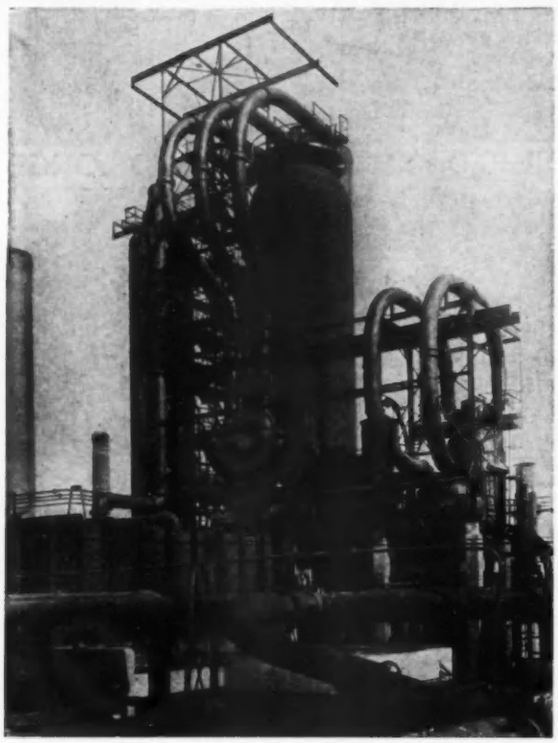
Modern Methods Make Modern Gulf Products



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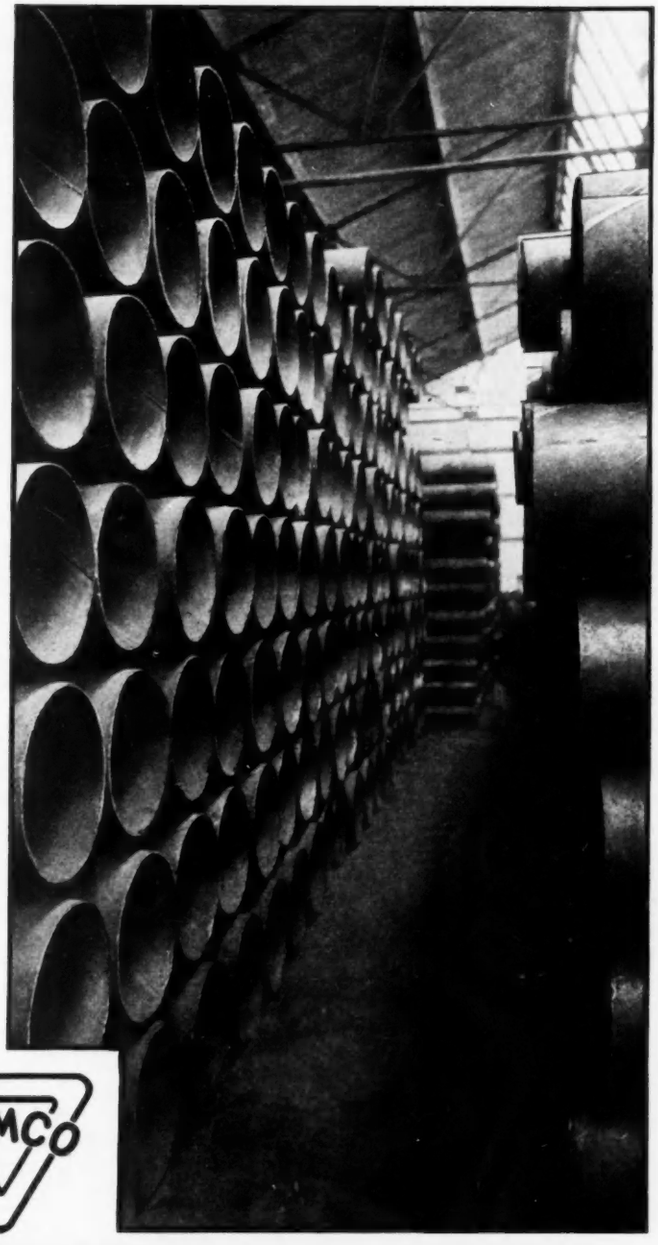

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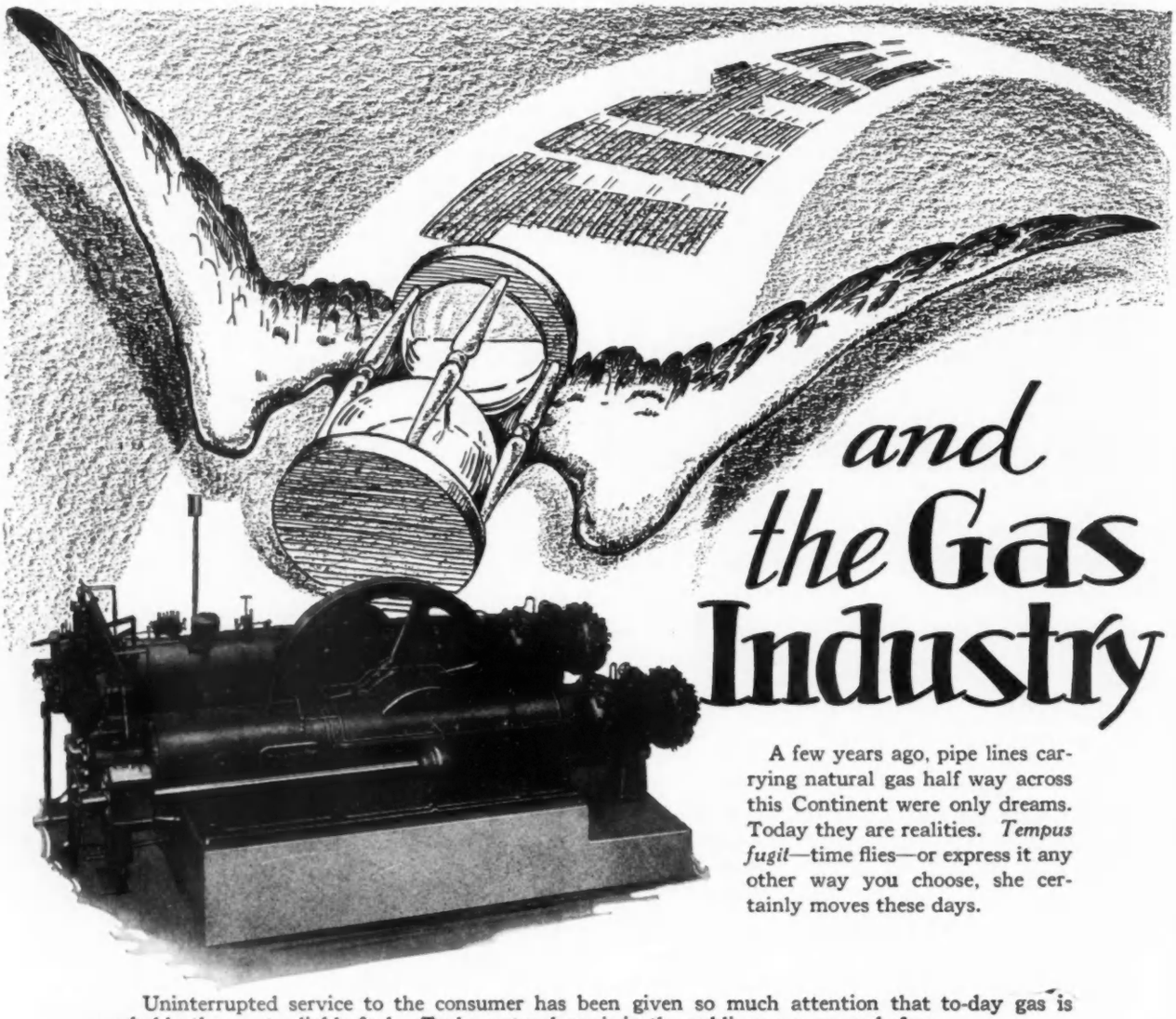

and the Gas Industry

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Editor

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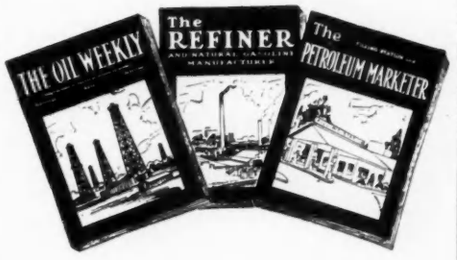

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SUBSIDIARY OF UNITED STATES STEEL CORPORATION

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"OILWELL"

THE OIL WEEKLY

VOLUME 61, NO. 7 MAY 1, 1931

THE WEEK'S NEWS

Independents Decide to Carry Further the Demand for Tariff

Tulsa.—With a tariff on crude oil and refined products as the major objective, the Independent Petroleum Association of America laid the ground work for its campaign at the annual convention here April 24. The session brought many routine matters to conclusion. All officials of the national association were re-elected. Only a few changes were made in the directorate, as well as in the list of vice-presidents for each state organization.

The effort to gain the tariff on oil imports will be waged as Washington as the base. Shortly an office will be opened there and Russell B. Brown, executive manager, will maintain headquarters in the national capitol, while the Tulsa headquarters will be under the direction of Dudley Monk, treasurer. Plans made at the annual meeting call for the raising of a fund of $125,000, which will be used for the effort to gain the tariff, as well as to carry on all other activities of the organization.

After routine matters had been considered, the business of the day started with a report from the board of directors. The directors met in Tulsa April 23 to form a platform for the association. Four propositions were presented by the directors and adopted by the meeting, as follows:

1. A tariff on oil and its products; 2. support from chambers of commerce and other organizations; 3. establishment of headquarters in Washington; and, 4. the raising of funds to carry on the work of the association.

Representatives Tom D. McKeown and F. B. Swank of Oklahoma were both heard during the morning. Both paid high praise to the effort made to gain the tariff on oil in the last congress and gave encouragement to the plan to continue the effort.

In the afternoon L. A. Milspaugh of Winfield, Kansas, told how he had been brought in the tariff effort, although he was not engaged in the oil industry. What the depression in oil field work had done to other lines of industry had been responsible for his decision to work for the tariff. He said a further concerted effort would bring success.

Pat Malloy, special counsel of Sinclair Oil & Gas Company, was introduced as one of the first advocates for a tariff. He spoke but briefly and branded as indefensible the "unrestricted importation of foreign oil and the legal restriction of domestic production through proration."

Malloy cautioned the independent producers about taking much heart from the decision of importing concerns to restrict imports. He said that decision had come about because the development in East Texas had made it possible to buy domestic oil and deliver it to the Atlantic seaboard as cheap or cheaper than it can be produced in South America and transported to the Atlantic seaboard.

Oklahoma's Support Pledged

James G. Cloud, president of the Oklahoma division of the association, pledged the support of Oklahoma producers to the program of providing its share of the fund essential to maintaining the work of the association.

E. B. Reeser, president of the American Petroleum Institute, named several efforts on which he thought oil producers should agree. His subject was "Co-operation in the Oil Industry." He said co-operation was the one thing the petroleum industry had never been able to accomplish.

"It seems," he said, "that we can get about 95 per cent of this industry to agree on a program. But the remaining small minority seems to block each program.

"Still I see no reason why independent producers can not agree on unit operation, for instance. Several instances of unit operation have been worked out to the benefit of all those who have participated.

"What your committee, last headed by Winston P. Henry, has done to get connections for stripper wells after January 1 is an excellent illustration of what can be accomplished by co-operation. I understand that this committee has succeeded in getting all wells listed with it, back on connections.

"The small amount of oil that is selling below the posted price offers an opportunity for some action. This oil is a drag on your price structure. Certainly the price of oil will never go higher until all the oil in this territory is selling at the posted price.

"I believe that Oklahoma producers can make more money on a total output of 450,000 barrels a day than they can on 650,000 barrels per day. That, of course, draws the criticism that proration is a price-fixing effort. But if any man in this audience has ever agreed to a proration program without the hope that it would better the price of oil, I should like to see him stand and give his reason. That is what we all are after, a better price for our oil.

"It seems to me that the independent producers of this country should go before their state governments and demand that the allowable output of oil be set at figures below

the actual demand. You can get it through co-operative action."

Thomas F. Hunter of Wichita Falls took the position that the tariff on petroleum and its products had been lost because of an unfair representation on the ways and means committee of the House of Representatives and the finance committee of the Senate. Majorities on these committees, he pointed out, are from that section of the United States north of the Ohio River and east of the Mississippi. He classed both as New England committees.

Raw Materials Unprotected

"It is no strange thing," he said, "that tariff schedules include duties on the manufactured articles of this section of the country, while the far greater area devoted to the production of raw materials is left without protection. What we must do is to form blocks of senators and congressmen from the South and West and force oil and other commodities into the tariff schedules. The tariff needs revision and it will not be revised to include farm products and raw materials until the New England block is broken."

He reviewed several of the bills pending before the Texas legislature and defended the pipe line rates measure and the bill which would segregate the selling of petroleum products from production and transportation.

The resolutions brought out by the committee drew some criticism from Pat Malloy. He said he was unwilling to give credit to Ray Lyman Wilbur, Secretary of the Interior, who was classed as an enemy to both the tariff and the embargo on oil. The oil states committee also drew his criticism, because it had gone to Washington with a program of 20 points and had submitted to a revision of these to three by the Federal Oil Conservation Board. These three, he classed, as of little consequence. He also took issue with that part of the resolution commending the American Petroleum Institute.

After some debate and a revision of that part of the resolution concerning the American Petroleum Institute, the resolutions were passed. Wirt Franklin and Thomas F. Hunter both defended the oil states committee and pointed out that there had been a change in the attitude of the Federal Oil Conservation Board. The reference to the American Petroleum Institute was changed to read "certain members of the board of directors."

The banquet in the evening was the occasion for much fun at the expense of many of the leaders of the industry, who were put under the spotlight of satire in a skit written by Philip Kates of Tulsa, under the title of "Solving the Oil Problem." James G. Cloud presided as toastmaster.

Messages were read from J. Elmer Thomas and Thomas P. Gore, senators from Oklahoma, and Harry F. Sinclair, Sinclair Consolidated Oil Corporation.

Officials of the Independent Petroleum Association of America

Wirt Franklin, president, Oklahoma City; Harold B. Fell, Ardmore, executive vice-president; Russell B. Brown, Tulsa, counsel; Dudley C. Monk, Tulsa, treasurer.

Vice-presidents for each state were elected as follows: Arkansas, Joseph Mahoney, El Dorado; California, J. R. Dorsey, Bakersfield; Colorado, Warwick Downing, Denver; Illinois, William Bell, Robinson; Kansas, A. D. Allison, Wichita; Kentucky, Paul G. Blazer, Ashland; Louisiana, W. Scot Heywood, Jennings; Montana, C. J. Dousman, Baker; New Mexico, Van S. Welch, Artesia; New York, J. Edward Jones, New York City; North Dakota, H. C. Schumacher, Fargo; Ohio, I. C. Grimm, Marietta; Oklahoma, Paul S. Ache, Tulsa; Texas, Marrs McLean, Beaumont; West Virginia, W. S. Hallinan, Charleston; Wyoming, Ray Phebus, Thermoplis; Pennsylvania, W. J. Brundred, Oil City.

Directors were elected to represent the several states in which there is oil production, as follows: Arkansas, T. H. Barton, C. E. Murdock and J. W. Olvey of El Dorado, and J. D. Reynolds of Camden.

California—Vern Dumas, J. R. Dorsey, R. A. Broomfield, A. T. Jergins and Woodley Phillips all of Los Angeles.

Colorado—D. D. Potter, Charles Orchard, W. B. Downing and Dr. W. A. Green, all of Denver.

Kansas—Arthur Denman, Sedan; Harry Garden, Augusta; A. M. Landon, Independence; A. S. Ritchie, E. B. Shawver and Ralph Pryor of Wichita; Arthur Brewer, Winfield.

Montana—William Fulton, Conrad.

New Mexico—C. J. Dester and William Dooley of Artesia; George Etz, Harry Leonard, W. A. Nicholas and Max Call of Roswell.

New York—George Bradley, Voliver; Harry Bradley, Wellsville; C. M. Hamilton, Ripley.

Oklahoma—A. Danciger, James G. Cloud, George A. Dye, Pat Malloy, E. L. Mayes, H. F. Wilcox, Dudley C. Monk, James H. Gardner, R. J. St. Germain, Fred S. Cook, Earl Sneed, Warran Churchill and F. B. Parriott all of Tulsa; C. E. Burlingame, Bartlesville; J. I. Cromwell, Muskogee; H. B. Fell, F. E. Tucker of Ardmore; B. A. LaSalle and Frank Fleet of Ada; T. T. Eason, Enid; W. R. Ramsey, Oklahoma City; J. B. Cowden and Knox Garvin of Duncan; Joseph Ray, Chickasha; Harry H. Diamond, Holdenville; Ross D. Pine, Okmulgee; Peyton Brown, Ponca City and J. B. Milam, Chelsea.

Louisiana—W. C. Geasel, Monroe.

Pennsylvania—E. M. Mudge, J. C. Trees, Henry Wilmer and John Leonard, all of Pittsburgh; Ralph Zook and Forrest Dorn of Bradford, Rodney Alexander, Oil City; and Vernon of Taylor, Indiana.

Texas—E. G. Bedford, Midland; Joseph Danciger, S. D. McElroy and W. H. Fuqua, all of Amarillo; Tom E. Cranfill, Dallas; Tom F. Hunter, Orville Bullington and Clifford Moores of Wichita Falls; O. W. Killam and George R. Marshall of Laredo; Marrs McLean, Beaumont; Claude Witherspoon, Frank L. Kistler of San Antonio; Ed Landreth and Travis Golay of Fort Worth; E. F. Robbins, Big Spring; Carl L. Estes, Tyler; Harry Pennington, San Antonio.

Missouri—S. A. Buder, Harry Ezzell and W. K. Hughes, St. Louis; Charles W. Fear, Jefferson City.

Wyoming—Paul Creaver and C. F. Fertig, both of Cody.

Kentucky—Courtney Combs and Julius Z. Miller of Owensboro, and W. H. Seltzer, Ashland.

Administration to Keep Within Statutes In Oil Industry Aid

Washington, D. C.—Reiterating that it is the intention of the administration to keep within the statutes in evolving plans to aid the petroleum industry, Attorney General Mitchell this week denied the reports of diverging opinions on the part of other members of the president's cabinet on this subject.

It was asserted by the Attorney General that neither

the Secretary of Commerce nor the Secretary of the Interior are proposing anything that would be violative of the provisions of the Sherman antitrust law.

"As I understand it," said Mr. Mitchell, discussing the legal phases of the administration's oil relief plan, "both the departments of interior and commerce and other officials are seeking to help the industry settle its problems within the law."

He declared that there was no dissension among these officials concerning either the oil states compact designed to effect curtailment of production, or the agreement worked out by Secretary of Commerce Lamont with the larger oil importing companies individually to cut down the volume of oil being brought into the United States from foreign countries.

(*Continued on page* 59)

Program for A. P. I. Division of Production Meeting Announced

New York City.—Governor R. S. Sterling of Texas, is expected to be a speaker at the first mid-year meeting of the American Petroleum Institute's division of production in the Baker Hotel at Dallas, Texas, June 2 to 4, it is indicated on the preliminary program. Conservation, proration and other policies of general interest to the petroleum industry and the public, as well as technical field developments and practices, will be discussed.

The session will open June 2 with meetings of the various committees of the division. The central committee on standardization and the special committee of the divisional general committee will hold a joint meeting to approve standardization reports.

The program for Wednesday, June 3, calls for a morning session, starting at 9:30 a. m., on production practice. W. C. Shutts and M. Bowman Thomas, Humble Oil & Refining Company, will present a paper, "Efficient Operation of Pumping Rigs," which will describe the correct setting of a plumbing rig as to arrangement of the beam hanger, walking beam, pitman and crank from a rig stress and power standpoint. The paper will consider also clockwise and counter-clockwise motion and a set-back position of the crank.

H. N. Marsh, B. H. Robinson and D. H. Kingman, all of General Petroleum Corporation of California, will discuss "High Volumetric Efficiency in Oil Well Pumping and Its Practical Results." This paper will define apparent and actual volumetric efficiency, method of determination, conditions, and advantages. Tentatively on the program is a paper, "Power Transmission Efficiency of Pumping Wells," by C. L. Shirley and J. T. Haywood, Shell Petroleum Corporation.

"A Method for Determining Production Allowances in Prorated Fields," will be explained in a paper by H. D. Wilde, Jr., and T. V. Moore, Humble Oil & Refining Company. The method is based upon pressure losses in producing sands incurred by flow of oil to the base of the well, and will be offered as a substitute for the "potential production" determined by open flow tests. It is said the data required may be taken at low rates of flow, and results do not depend upon the type of equipment in the well.

Governor Sterling tentatively is on the program for the June 3 afternoon session, at which the current production situation will be discussed. The meeting will open at 2:30 p. m. R. R. Penn, Penn Oil Company, Institute vice-president and chairman of the division of production, will deliver an address. Warner Clark, Standard Oil Company of California, will speak on "Proration" and R. E. Hardwicke, an attorney, will discuss the "Legal Aspects of Gas Conservation in the Production of Oil."

Open Meeting June 3

The evening session, starting at 8:00 p. m., will be an open meeting, to which the general public has been invited, of the central committee on drilling and production practice. It will be given over largely to discussion.

The first paper on the program for the morning session, Thursday, June 4, will be the "Report of the American Petroleum Institute Research Associate on Corrosion at the Bureau of Standards," presented by Gordon N. Scott, the associate. R. S. Cole, Gypsy Oil Company, will speak on "Legal Phases of Oil Field Pollution." George F. Prussing, Union Oil Company of California, chairman of the division of production committee on accident prevention, will discuss "Economic Aspects of Accident Prevention."

The afternoon session, opening at 1:30 p. m., will be given over to consideration of drilling practices. E. P. Tallant, Union Oil Company of California, will present a paper prepared with the co-operation of the California district drilling practice committee, on "Development, Reclamation, and Disposal of Rotary Mud in California." The paper will describe clay mining, mixing, and transportation; methods of separating sand, oil, and gas from used mud, and methods and cost of waste mud disposal.

Characteristics of Gulf Coast formations, the problems involved, and their causes, as well as remedial and preventive treatment, will be considered by C. P. Parsons, Halliburton Oil Well Cementing Company; W. T. Doherty, Humble Oil & Refining Company, and Stanley Gill, Gulf Production Company, in a paper entitled "Drilling Fluid Problems and Treatment in the Gulf Coast."

Hu M. Harris and J. E. Eckel, Humble Oil & Refining Company, in a paper, "Oil Field Boiler Tests," will cover results of actual tests made on three types of locomotive boilers, regular, thermic syphon and application of superheaters. Included will be comparisons of different kinds of steam produced, and discussion of steam requirements for drilling rigs in the Gulf Coast area.

The operation, maintenance and economy of internal combustion engines for rotary drilling, whether operated on natural gas, gasoline or fuel oil, will be considered by David L. Trax, Gypsy Oil Company, and R. R. Hawkins, The Texas Company, in their paper "Internal Combustion Engines for Rotary Drilling." An added feature will be statement of cost of drilling per foot of fuel and water to various depths.

Blaine B. Westcott, The Gulf Companies, will present a paper, "Hard Surfaced Rotary Bits," in which he will sketch the commercial development of both sintered and fused tungsten carbides, as well as their chemical and physical properties. Methods of manufacture, application to, and effect on, bits will be illustrated. The paper further will consider the effect of heat treatment on bit structure and its influence on probable performance, and present a summary of opinions and recommendations from users and manufacturers relative to type of steel and heat treatment.

On June 5, the day following the close of the mid-year meeting, the Institute's board of directors will convene at 10:30 a. m., in the Texas Hotel at Fort Worth, Texas.

A Method for Determining

Correct Spacing For Wells

With Special Reference to West Texas

By ADDISON YOUNG, *Geologist*

ONCE upon a time—so runs an old Greek yarn—there lived a giant named Procrustes. He possessed a bed which, like all beds, was of a fixed, invariable length. Now it was Procrustes' quaint custom to waylay travelers and stretch them out on the aforementioned bed. If a traveler was too long, the giant promptly raised his ax and lopped off the excess bit of anatomy. On the other hand, a man too short was quickly brought up to standard by means of suitable apparatus designed to produce tension. Incidentally, the legend reports that Procrustes found only one man whose anatomy required none of these strenuous alterations.

In West Texas there is a certain parallel to the Procrustean bed in the rather common custom of allotting ten acres to a well. For no single program can apply equally well throughout an area in which the range of differing characteristics is so great as among the pools of West Texas. Consequently there must result some distortion—in this instance financial— although not so obvious as in the case of Procrustes' unhappy victims. Of course, the reason why well spacing is not more varied is that in the very early life of a pool there is a meagerness of the very production data which determines well spacing. So the usual result is the adoption of the standard spacing which experience has shown gives fairly satisfactory results, and the program adopted at the beginning often prevails throughout the life of the pool.

However, a given pool is most economically developed when the well spacing is closely fitted to the particular conditions of the pool, and such proper spacing must necessarily be determined early in its drilling history. The writer offers the method outlined below as an approximate solution of the problem. Many valuable suggestions and criticisms were given by S. H. Casteel and Dana Young.

THE ideal well spacing for any pool is that spacing which yields the maximum net profit. It represents a condition of equilibrium between a number of conflicting factors. Undoubtedly the cheapest scheme for drilling up a pool is with the discovery well alone. But in spite of the low drilling cost, so much oil is left in the ground that the ultimate profit is far below the maximum. At the other extreme are town-lot pools where high drilling costs absorb large portions of the possible profit. Besides recovery and drilling costs there are several other factors which affect the determination of an ideal spacing policy for any pool. It should be noted that the maximum net profit is seldom the highest possible percentage return on drilling investment alone. But in respect to the entire investment in a given region, including dry holes and all lease bonuses, the maximum net profit is also the maximum percentage return. In rare cases where this is not true the following method does not apply without modification.

The complete list of those factors which must be balanced against each other in a calculation for ideal spacing is as follows:

(*a*) *Recovery of oil per acre.* This is not a constant quantity, but is a variable dependent on the number of acres drained by one well. Based on studies of a number of pools, W. W. Cutler[1] determined empirically that, where interference is present, recovery per acre is inversely proportional to the square root of the number of acres per well. This same ratio is also obtained if a calculation is made on the likely assumption, that, other things being equal, the work done by energy in any unit portion of a reservoir is constant. This ratio, therefore, appears to have general applicability, and so in the following discussion is assumed to hold true in West Texas.

(*b*) Rate of decline of production. Two pools may offer equal ultimate yields, yet due to differing rates of decline, the present worth of their oil may not be the same.

(*c*) *Price of oil.*

(*d*) *Lifting cost.*

(*e*) *Cost of drilling.*

(*f*) *Royalty.* In West Texas the rate is generally one-eighth, but occasionally is one-sixth.

When only the discovery well of a new pool has been completed, the royalty percentage is known exactly; drilling costs may be estimated closely. Price of oil is known for the present, but is subject to future fluctuations. Rate of decline, lifting cost, and recovery per acre are unknown but must be estimated, the last item, recovery, offering the most difficulties. Unfortunately, they cannot be exactly known until all oil has been recovered, at which time the knowledge is of no practical value. However, data from neighboring pools and the behavior of the discovery well are of considerable help in making estimates. Later, specific examples will be given in which errors of 25 per cent or more in estimating these factors are shown to be permissible.

So, from these data, admittedly approximate, a simple formula giving ideal well spacing is obtainable as follows:

Let

x = Recovery per acre.
n = Number of acres drained by one well.
C = Cost of drilling one well. Under this are included all costs not assigned to lifting cost.
P = Price of oil.
R = Royalty fraction.
L = Ratio of lifting costs to price of oil.
Q = Net profit per acre.
D = Factor depending on decline.

"x," "n" and "Q" are variables; the other quantities, while

[1] W. W. Cutler, Jr.: Relation of drilling campaign to income from oil properties, U. S. Bureau of Mines, Report of Investigations, No. 2270, Aug. 1921.

not strictly constants, will be treated as such to simplify the mathematical operations. The justification for this procedure will be indicated in examples following the general treatment.

The net profit per acre is equal to the value of all oil recovered, less value of royalty barrels, cost of producing the oil, and a fraction of the cost of one well, depending on the spacing. Expressed symbolically:

$$Q = (Px - RPx - PLx) - \frac{C}{n}$$

$$Q = Px(1 - R - L) - \frac{C}{n}$$

The recovery per acre is inversely proportional to the square root of the number of acres per well. In West Texas estimates of recovery are necessarily based on a spacing of one well to 10 acres, because most available production data are on wells so spaced. Let the recovery per acre on a 10-acre spacing be symbolized by "A." Then,

$$\frac{x}{A} = \frac{\sqrt{10}}{\sqrt{n}} \quad x = \frac{3.16A}{\sqrt{n}}$$

Substituting for "x" in the equation above,

$$Q = \frac{3.16\,PA(1 - R - L)}{\sqrt{n}} - \frac{C}{n}$$

For convenience,

Let $E = 3.16\,PA(1 - R - L)$

Then,

$$Q = \frac{E}{\sqrt{n}} - \frac{C}{n} = En^{-1/2} - Cn^{-1}$$

This formula is not quite correct because it does not take into account the fact that oil is not recovered immediately but is returned over a period of years, subject to a declining rate of production. Therefore, a correction giving the present worth of all expected oil must be included in the formula. This correction must be computed separately for each pool, and may be done in the following manner which, though approximate, is sufficiently accurate for the purpose. Suppose a pool is estimated to have a life of seven years; and, in addition, it is estimated that the oil produced each year, beginning with the first year, will amount to the following fractions of the total production: 0.4, 0.22, 0.14, 0.09, 0.06, 0.05, 0.04. Then, with an interest rate of 10 per cent which is consistent with the risks involved, the first term of the equation above for "Q" is expanded thus:

$$\frac{E}{\sqrt{n}} \text{ becomes } \frac{E}{\sqrt{n}}\left\{\frac{.4}{(1.10)} + \frac{.22}{(1.10)^2} + \frac{.14}{(1.10)^3} + \frac{.09}{(1.10)^4} + \right.$$

$$\left. \frac{.06}{(1.10)^5} + \frac{.05}{(1.10)^6} + \frac{.04}{(1.10)^7}\right\} = .80\frac{E}{\sqrt{n}}$$

It should be noted that the last terms of the expansion are increasingly small. Consequently the more remote unpredictable changes in price of oil affect increasingly smaller amounts of oil. If the data warrant, changes in price of oil and lifting cost can be taken care of by expansions similar to the one shown above for decline.

Inasmuch as the constant (.80), arrived at above, will not apply to every pool, a general symbol should take its place in the equation for "Q." Let the letter "D" represent this factor which allows for decline. Then, the corrected equation for "Q" becomes:

$$Q = DEn^{-1/2} - Cn^{-1}$$

This will be called Equation 1.

The ideal spacing is, then, that value of "n" for which "Q," net profit, is a maximum. Differentiate with respect to "n"

$$\frac{dQ}{dn} = -\frac{DE}{2}n^{-3/2} + Cn^{-2}$$

Then "Q" is a maximum when $\frac{dQ}{dn} = 0$

Set equal to zero, and solve for "n."

$$-\frac{DE}{2}n^{-3/2} + Cn^{-2} = n^{-3/2}\left(-\frac{DE}{2} + Cn^{-1/2}\right) = 0$$

$$\text{Ideal } n = \left(\frac{2C}{DE}\right)^2 \text{ where } E = 3.16\,PA(1 - R - L)$$

This will be called Equation 2. It gives the ideal number of acres to each well.

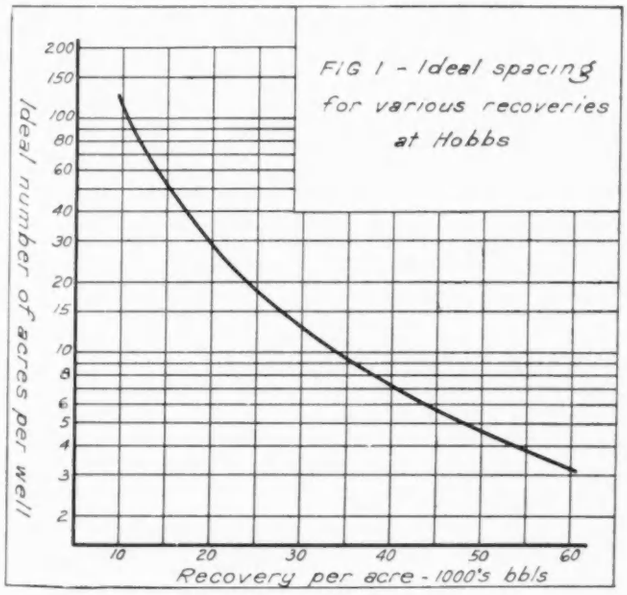
Equations 1 and 2 can be made to apply to any field, regardless of location, by a suitable slight change in the relation

$$E = 3.16\ PA\ (1 - R - L)$$

The constant 3.16 must be replaced by a number which is the square root of the standard number of acres per well to which production data are referred in the area in question. Thus, in a field in which one well to four acres is the rule, the quantity "E" would equal 2.0 PA (1—R—L). An equation giving maximum profit corresponding to ideal spacing is obtainable by substituting the expression for "n" from Equation 2 in Equation 1:

$$\text{Maximum } Q = \frac{D^2E^2}{4C}$$

It is obvious that the soundness of the results obtained by using these formulae is, in large measure, directly proportional to the accuracy of values assigned to the constants involved. At the outset of drilling absolutely perfect values cannot be given every constant; consequently the calculated number for ideal spacing will not be a mathematically exact quantity. However, it does not necessarily follow that the calculated ideal is entirely unreliable. This fact can best be illustrated from



the graphs of Equations 1 and 2 applied to specific pools. As examples, the Hobbs pool of New Mexico and the Penn pool in Ector County, Texas, have been selected and are discussed in the succeeding paragraphs.

Applications to Hobbs

Figure 1 is a graph of Equation 2 for the Hobbs pool. In the construction of this curve the following values were used for the several constants: D = 0.80; P = $0.90; L = 0.22; C = $80,000; R = 0.125. The value assigned P is an average of the estimated price of oil for each year during the life of the pool, weighted according to the estimated production for each year. In Figure 1 recovery per acre is treated as a

variable so that the figure shows the computed ideal spacing corresponding to any recovery. Conversely, it shows that a spacing of one well to 10 acres is ideal only for a recovery of 34,000 barrels per acre. It is clear from this curve that a single spacing scheme can suit only a small portion of a pool as large as Hobbs. Semi-logarithmic coordinates were used in the plotting. On the usual rectangular coordinates the lower part of the curve would appear considerably flatter, and the upper part steeper.

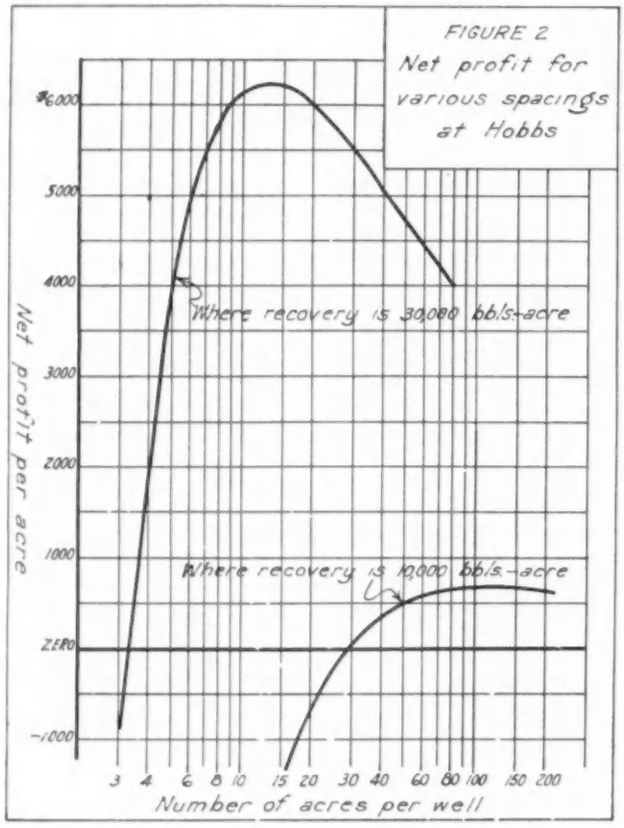
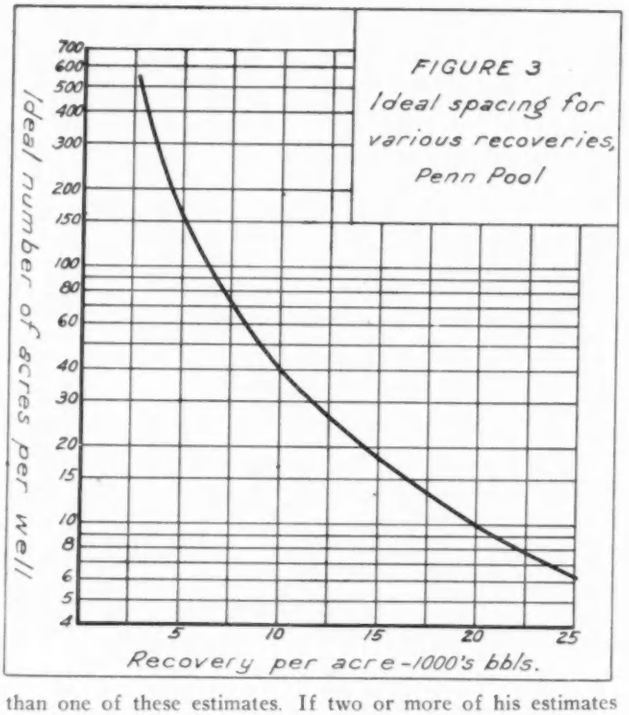


Figure 2 is a graph of Equation 1 applied to Hobbs pool. It gives the net profit per acre corresponding to any well spacing scheme. The lower curve of this figure indicates these relations where the actual recovery is 10,000 barrels per acre, a recovery which the writer believes will obtain at the southeastern extremity of the pool. This lower curve shows that for such a recovery there is no profit if wells are spaced closer than about one to 30, and that a maximum profit of $695 per acre is gained with the ideal spacing of one well to 114 acres. It should be noted, however, that it is questionable that the inverse square root ratio of recovery to drainage area holds true for such extremely wide spacings, so that in actual practice it would probably be best to space wells closer. A safe plan would be to choose the spacing indicated by the point where the curve begins to flatten toward the maximum. In the example shown, this point is at about 60 acres to the well, for which the indicated profit is only about $100 less than the maximum. The actual practice of spacing wells one to 40 acres in this area seems to be the closest practicable approach to the ideal under divided ownership, although a wider spacing would be better.

The upper curve of Figure 2 shows the similar relations of net profit to spacing for a recovery of 30,000 barrels per acre, which the writer estimates will be the average recovery for a large part of the prolific area in the northwestern part of the pool. This curve as well as Figure 1 shows that the ideal spacing is one well to 13 acres. For spacings less than one to 10 the profit falls off with great rapidity. On the other hand for spacings wider than the ideal, the net profit is reduced much more gradually as indicated by the more gentle slope of the right-hand portion of the curve. (The logarithmic rulings obscure this gentleness of slope to a large extent). Therefore, under similar conditions, this curve suggests that in case of doubt about ultimate recovery or any other factor controlling spacing, it is best to err in the direction of spacing wells too widely. The practice on some leases in this part of the pool of locating six wells to an 80-acre lease is excellent. Ten-acre locations are also satisfactory, but one well to a 40 is too extended.

A comparison of Figures 1 and 2 will show what limits of error in estimating recovery are permissible. Let it be assumed, as a measuring rod, that any net profit within 90 per cent of the possible maximum is satisfactory. Suppose an operator owns a lease at Hobbs on which the ultimate recovery per acre will eventually prove to be exactly 30,000 per acre. However, he does not know this, and after consulting his best judgment, he decides that his recovery will be 39,000 barrels per acre. He looks at Figure 1 and sees that such a recovery calls for a spacing of one well to 7.5 acres which he accordingly uses. However, because his recovery is only 30,000 his final net profit per acre will be that yielded by 30,000 barrels on a spacing of one to 7.5, which Figure 2 shows is $5650 per acre, compared to a possible maximum of $6250 per acre. Thus, the operator overestimated recovery 9000 barrels or 30 per cent, but incurred a loss of only 10 per cent. Similarly he could have underestimated his recovery 9000 barrels and still have taken a loss of only 10 per cent of his possible profit.

By similar calculations it may be shown that this hypothetical operator could be permitted to make the following errors in his estimates of the other constants: for D, 31 per cent; for C, drilling cost, 24 per cent; for P, price of oil, 22 per cent; for L, ratio of lifting cost to price of oil, 100 per cent. Of course, he could not be in error to the allowable limit on more



than one of these estimates. If two or more of his estimates are simultaneously in error, the combined effect of such errors must not exceed the effect of a single error of the maximum permissible amount. These generous limits of error are the justification for treating these quantities, such as lifting cost, as constants, although they are not strictly such.

Figure 3 and Figure 4 are similarly the graphs of Equations 2 and 1, respectively, applied to the Penn pool. Figure 4 is

based on a recovery of 10,000 barrels, this estimate being furnished by S. H. Casteel who is in close touch with this pool. Other constants used in the construction of these curves are C=$40,000; P=$0.80; R=⅛; L=0.25; O=.80.

Figure 3 shows that for the estimated recovery of 10,000 barrels per acre the ideal spacing is one well to 40 acres. This computed ideal spacing applies to leases on which the royalty is one-eighth. On some of the leases the royalty is one-sixth, and for them, other things being equal, the ideal spacing is slightly greater, namely one well to 47 acres. The actual program of six wells to 80 acres, while better than one to 10 acres, is still not sufficient extended. Wells close to the east line of Block 35 will probably have recoveries of 15,000 barrels, or more, for while—from Figure 3—a spacing of one to 18 acres or less would be best. Figure 4, like the upper curve of Figure 2, suggests that in case of doubt the best policy is to space wells too widely rather than too closely together. A comparison of Figures 3 and 4—such as was made for the Hobbs pool—shows that an error of 3000 barrels or 33 per cent in estimating recovery is permissible.

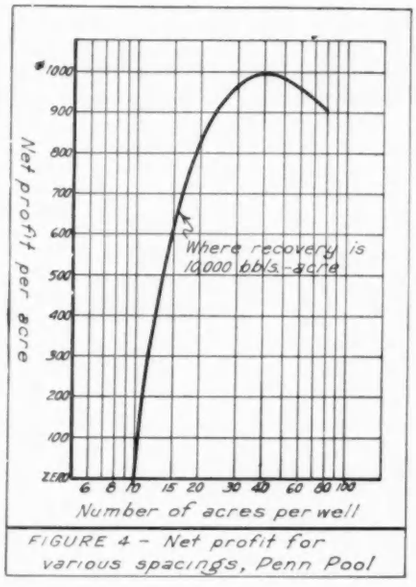


FIGURE 4 - Net profit for various spacings, Penn Pool

Where the productive area of a pool is divided into a number of relatively small, separately owned tracts, the application of economic principles to spacing is considerably hampered. In the first place, the mere dimensions of leases are an important obstacle. For example, on a 40-acre tract there are only a limited number of ways wells may conveniently be arranged when the lines must be protected; the operator is limited to a choice between one, four or nine (or possibly some higher squared number), wells on his lease. The same difficulty holds true in large measure on the greater sized tracts. Under divided ownership, then, the operator, even if he knows what is the best spacing, is forced to adopt one of a limited number of conventional spacings. The best he can do is to choose the one that is nearest the ideal. But sometimes he cannot gain that much when he must space his wells, at least his line wells, according to the practice of his neighbors. So it happens that a few wells badly spaced at the opening of a pool will cause a great many other wells also to be badly spaced.

Unfortunately, the actual financial loss which is entailed by the manner in which divided ownership hampers correct well spacing is not visible. Such losses are not readily deducible from the usual cost and income accounts. In an attempt to render such loss more visible Figure 5 has been prepared. It is a plat of a hypothetical section on which there are seven separately owned leases. It is assumed that the ultimate recovery per acre will be 22,000 barrels (for a 10-acre spacing), and that the various costs and other factors which affect spacing are the same as those previously given for the Hobbs pool. This last assumption is merely a convenient labor-saving device—there is, of course, no such section at Hobbs. Then let it be assumed that the seven operators estimate their ultimate recovery correctly at 22,000 barrels, and from Figure 1 determine that the ideal spacing is one well to 24 acres. This spacing they set out to accomplish, limited only by the dimensions and separateness of their leases. Operators of tracts A and B have leases much smaller than the ideal number of acres per well. They have the choice of either drilling one well on 10 acres or not drilling at all, and naturally they elect the former as there is some profit even on this poor spacing. This action forces a number of other 10-acre wells on other tracts. The operators of the larger tracts F and G are able to space their interior wells satisfactorily at nearly the ideal spacing. Locating their line wells three to a half mile assumes the willingness and ability of their neighbors in adjoining sections to conform to such an arrangement.

Altogether 42 wells are drilled on the section compared to the ideal number of 26. The loss incurred by this over-drilling is not distributed uniformly, as will be seen on Figure 5 which shows the loss on each lease. This loss is the difference between actual profit, and the profit which would have accrued had the wells been spaced ideally, and is readily computed from Equation 1. Totalling these individual losses gives a figure of $193,200 as the loss sustained by the entire section as a result of cramping effects of divided ownership on proper spacing. And it has assumed that the operators chose the best spacing under the circumstances. If they had spaced their wells one to 10 acres regardless, this misfit-spacing loss would have been much greater—about $640,000.

These considerations, and others, point to the desirability of unit operation from a spacing standpoint alone. Under unit operation the spacing program for a pool can be readily altered to suit new conditions. Thus, if later drilled wells show that the original scheme is not the best, a change can be made immediately. Under divided ownership there is a pronounced lag in taking advantage of the store of information that accumulates with each additional well. Furthermore, under unit operation spacing even in the same pool can be varied to suit the areas of different productivity.

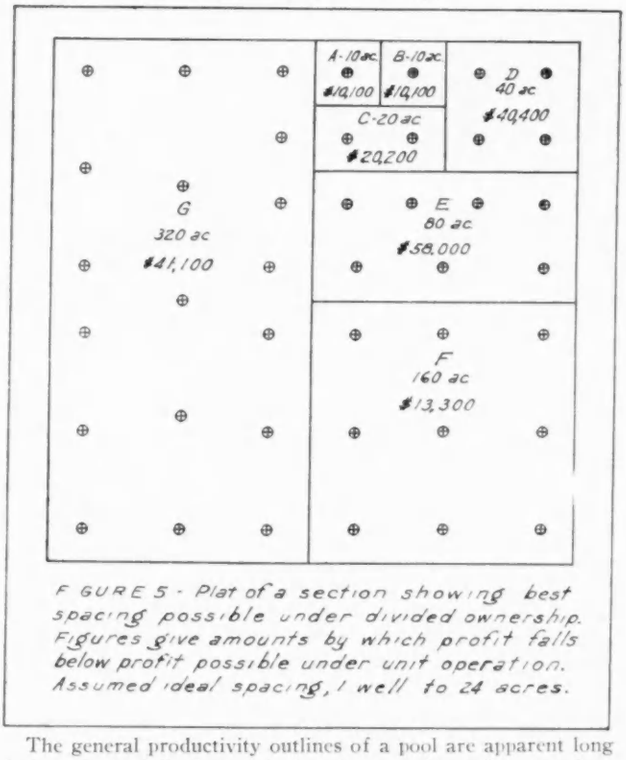


FIGURE 5 - Plat of a section showing best spacing possible under divided ownership. Figures give amounts by which profit falls below profit possible under unit operation. Assumed ideal spacing, 1 well to 24 acres.

The general productivity outlines of a pool are apparent long before it is drilled up. And unit operation offers the best means of taking advantage of such knowledge with least delay.

Storage in Depleted Sand Saves

EXCESS TURNER VALLEY

Gas *for* Future Use

By S. J. COOK

INTEREST in oil and natural gas production in Canada centers in the western province of Alberta. Here from several fields, of which the famous Turner Valley is the chief, two-thirds of the oil and four-fifths of the natural gas obtained in the Dominion are produced.

In this province, there is a close relation between oil production and the output of natural gas, much of the oil in Alberta being obtained from wells yielding both gas and oil. Pressures of 1000 pounds and over are met in the gas wells of Turner Valley, and the reduction in pressure at the outlets from these wells is accompanied by a great expansion of the gas, which so reduces the temperature that the scrubbing towers used to collect the condensed oil are continuously sheathed in a thick cover of ice. The oil thus obtained is sent to the refinery, and the marketable portion of the gas is run to pipe lines serving cities and towns in Alberta.

Sales of oil and gas in Alberta exceed $8,000,000 yearly and fully justify the continuance of operations despite the fact that the surplus gas, which it is estimated exceeds 300,000,000 cubic feet daily, is allowed to burn to waste, the flames lighting the countryside for miles around and making a spectacular scene at night.

Much has been written about this appalling waste of natural gas, and a great deal of research work has been done in an attempt to find useful outlets for it, but the volume is so large that adequate means of commercial utilization have not yet been found.

Last year, one hopeful experiment was tried, which seems to promise good results. Acting on a plan conceived by its chief engineer, the largest gas company operating in the area undertook to save some of this waste gas by forcing it back into old wells in a field nearby that had been abandoned as worked out. Now, after six months' operation, the plan appears to be even more effective than it was hoped it would be. Already some 900,000,000 cubic feet of gas have been saved for future use.

Plan Successful

This plan, without doubt, is one of the most successful experiments in conservation ever tried in Canada in connection with the natural gas supply, and the scheme has the full support of the governments concerned.

One of the most gratifying features of the situation is that, while this project is unique in the annals of Canada, the company concerned has made available for publication not only the details of the scheme, but also the results obtained thus far. The writer desires here to express his appreciation to Canadian Western Natural Gas, Light, Heat and Power Company Limited for the information contained in this article, and for permission to publish the interesting record of the splendid work done by this company in the recharging of the depleted gas sands in the Bow Island field with surplus gas from the Turner Valley.

P. D. Mellon, the company's general superintendent and chief engineer, enjoys the distinction of being the first to suggest the idea of recharging or repressuring the old Bow Island field. In the development of the scheme as approved by the company, several others were actively associated with Mr. Mellon, among whom the following may be mentioned because of their special contributions to the work: R. M. Gourlay, engineer in charge of the design and construction of the compressor plant, buildings, and auxiliary equipment; J. J. Morrison, field superintendent in charge of repairs to wells and field lines, and who also supervised the operation of the compressor station since starting; and G. R. Elliott, Dominion government official, who co-operated in all matters pertaining to his department.

History of Field

Before entering on a discussion of the repressuring experiment, it will be of interest to sketch briefly the history of the field where the work is being done.

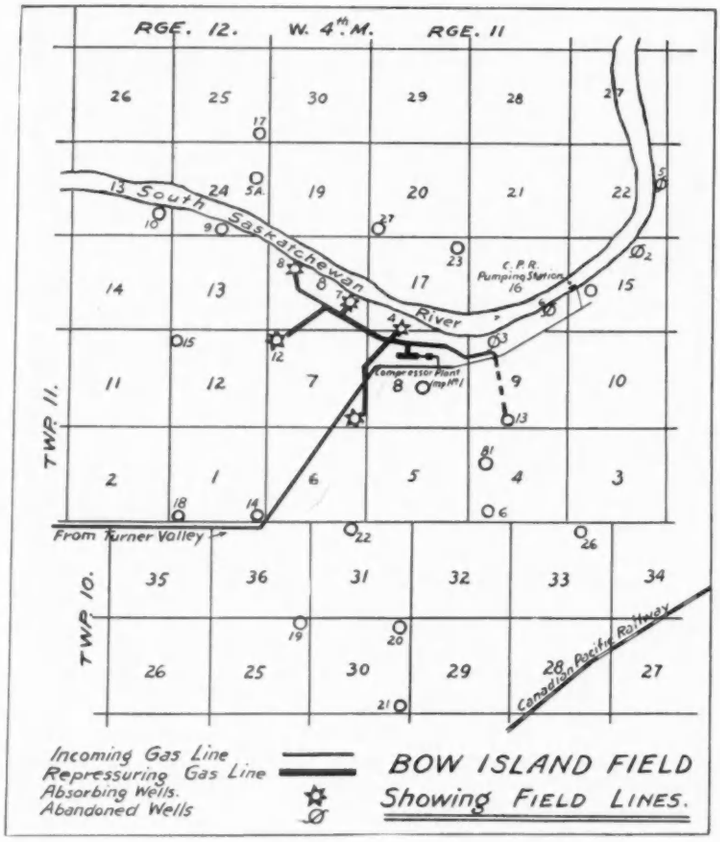
That the Bow Island area was rich in natural gas was discovered in 1908, when engineers of Canadian Pacific Railway Company drilling for water, struck a large flow of gas in a well near Bow Island village. Number 1 well was reported to have an open flow of 8,500,000 cubic feet daily, and an initial rock pressure of 800 pounds. In 1911 this well passed into the hands of Canadian Western Natural Gas, Light, Heat and Power Company, Limited, who then proceeded to develop the field.

Located in Townships 10 and 11, Ranges 11 and 12, west of the fourth meridian, the Bow Island field lies about 60 miles north of the international boundary between Canada and the United States, and northwest of the village of the same name on the Crowsnest branch of the Canadian Pacific Railway, midway between Lethbridge and Medicine Hat. Calgary, the principal city in the area, is 170 miles northwest of Bow Island. Between these two points there is a 16-inch pipe line, having a daily capacity of 39,000,000 cubic feet. At various points along the line there are branches serving numerous small towns and villages.

In the Bow Island field the gas ocurs in a porous sandstone band, 35 feet thick in the Colorado shales, about 1300 feet below the base of the Milk River sandstone. In form, the gas-bearing structure is an irregular dome, having a closure of only 50 feet, but as this dome is situated on the crest of a low, broad anticline, known as the Sweet Grass arch, extending in a northwesterly direction from the uplift of Montana, the situation was favorable for the accumulation of gas and as a result the supply in the Bow Island field proved sufficient for the cities and towns in the Calgary area for many years.

In the period from 1911 to 1927, 27 wells were drilled to the gas horizon, at an average depth of about 2000 feet, the shallowest being Number 4, which was 1843 feet deep, and the deepest Number 18, at 2230 feet.

Exploratory drilling showed that the dome was surrounded



by edge water, which seeped into the dome as the gas was withdrawn.

It is estimated that the Bow Island field originally contained about 45,000,000,000 cubic feet of gas, under pressures varying from 700 to 800 pounds. Between the years 1909 and 1927, about 38,000,000,000 feet of gas were withdrawn, and at the end of that period the rock pressure had dropped to 256 pounds.

Fortunately, other fields had been discovered by this time, so that it was possible to supply the industrial and domestic needs of the area from other sources, and the Bow Island field was abandoned in time to prevent complete flooding of the wells.

Development in the Foremost field, 20 miles south of Bow Island, started in 1919, but really extensive work dates only from 1923; nine wells had been drilled by 1926, and the closed pressures ranged from 585 to 640 pounds per square inch, with open flows as high as 17,000,000 cubic feet per day. Gas from these wells was pumped into the Calgary-Bow Island pipe line.

Then in 1924, wells were put down in Turner Valley, 30 miles southwest of Calgary, and the area soon became famous. Here, in October of that year, the Royalite Number 4 well was brought in with an initial open flow of 20,000,000 cubic feet, only to be succeeded by numerous other wells producing volumes of gas far in excess of local needs.

With the bringing in of these wells, the search for gas was ended; the new problem was to find some means of utilizing the surplus.

It was then that the idea occurred to Mr. Mellon to recharge the worked-out Bow Island field. Here was a reservoir that had held some 45,000,000,000 cubic feet of gas under pressure of 700 pounds and from which 38,000,000,000 cubic feet had been withdrawn, the pressure dropping accordingly. It seemed reasonable that a volume of gas at least equal to that which had been withdrawn could be introduced into the old wells, and the success or failure of the experiment could be read on the pressure gauges. A rise in pressure would indicate that the gas pumped in was being retained, as in a reservoir or gasometer.

Records Made

Records of the wells were available, and the current rock pressures were known. As indicating the conditions obtaining in the several wells when this experiment was begun, Table No. 1 shows the original open flow and initial rock pressure recorded for each well, and the corresponding data at the end of 1929. (It may be noted that the figures for 1927, when withdrawal of gas from Bow Island was practically discontinued were not very different from those shown for 1929). Reference to the table will show for the period of depletion 1909-1929 a drop in the average rock pressures recorded from the original 682 pounds to only 252 pounds at the end of 1929. When the first trial of repressuring was started in 1927, the average rock pressure was 256 pounds.

Preliminary work having been completed and the wells checked over to determine their condition, the first attempt to repressure the old field was begun on September 28, 1927, when gas from the Foremost field was brought in through the company's transmission line to the Bow Island field and there pumped into eight old wells, the others being capped.

During the next five days, about 37,000,000 cubic feet of gas were introduced into the old wells and the pressure gauges were watched carefully as the trial proceeded. With a great deal of satisfaction observers noted a steady rise in rock pressures from an average of 256 pounds per square inch to 286 pounds, or nearly one pound for every 1,000,000 feet pumped into the old well.

Other Factors Present

Thus it appeared that the plan might be feasible, but several other factors had to be considered before the work could be undertaken on a large scale.

It is obvious that there can be no control over the lateral spread of gas pumped into old wells, and the first step then was to secure rights to the whole area in which recharging operations were to be attempted.

After some negotiations, satisfactory arrangements were made between Canadian Western Natural Gas, Light, Heat and Power Company and Canadian Pacific Railway Company, which owned certain mineral rights in the area, whereby the interests of the repressuring company were safeguarded. Further discussions led to an agreement with Royalite Oil Company for the use of surplus gas from the Turner Valley field, the plan being to use the Calgary-Bow Island pipe line for the transfer, supplying the towns along the line and using the surplus at the Bow Island end for repressuring the old field.

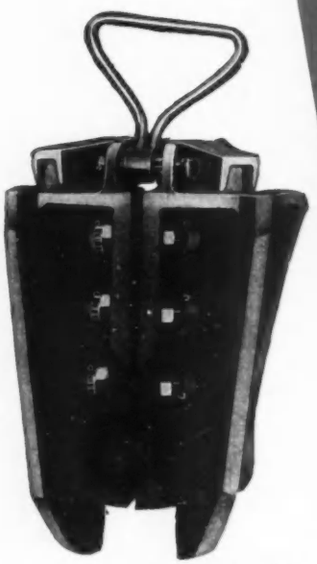
All necessary preliminary steps to insure control have been taken, Canadian Western Natural Gas, Light, Heat and Power Company made application to the Dominion government for a reservation of sufficient underground rights to protect the company's interests over a period of years. This request was favorably considered by Dominion government officials, who saw in the proposed plan a means of conserving at least a part of the natural gas then being allowed to burn to waste in the Turner Valley.

Consequently, reservations were granted the company for a

ANOTHER PROMINENT DRILLING CONTRACTOR SAYS:

"MISSION SLIPS

DO NOT MASH, BITE OR MAR THE PIPE . . . ."



BEARD & HAMMOND, INC.
OIL OPERATORS AND DRILLING CONTRACTORS
Philcade Building
TULSA, OKLAHOMA
March 5th, 1931

Mission Sales Company,
2416 Railroad Street,
Houston, Texas.

Gentlemen:-

During the Petroleum Exposition of 1930, we had occasion to examine your rotary pipe slips and pump valves. Shortly after, we purchased a set of each to be used on one of our drilling rigs in the Oklahoma City field.

After submitting both the valves and slips to the most severe tests, we find that the valves seat better and last longer than any other type on the market. The durability, long life and the recent reduction in the price of the valves have decreased our expense on pump parts, per well, a very substantial amount.

We find that the slips do not mash, bite or mar the pipe, and that we are relieved from that source of trouble which has proven quite an expense in the past.

We have issued instructions to our drilling superintendents to replace, as needed, all pipe slips and pump valves with Mission Sales equipment.

Very truly yours,

BEARD AND HAMMOND, INCORPORATED

J. C. Hammond
President.

J.C.Hammond:kh

Republic Supply Company

OIL AND GAS WELL SUPPLIES

Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS

Bow Island repressuring plant of Canadian Western Natural Gas, Light, Heat and Power Company, Limited, at Bow River, Alberta, Canada

Table No. 1
Rock pressures and open flow in Bow Island gas field, 1909-1929.

(Supplied by Canadian Western Natural Gas, Light, Heat and Power Company, Limited)

Well No.	Year drilled	Open Flow Original	Open Flow 1929	Rock pressure (pounds) Original	Rock pressure (pounds) 1929	Remarks
1	1909	8,500	1,235	740	382	
2	1911	6,850	....	765	...	Abandoned
3	1911	13,100	1,952	745	178	
4	1911	29,000	1,683	735	259	
5	1911	1,283	....	795	...	Abandoned
6	1911	4,190	....	755	...	Abandoned
7	1912	7,000	1,095	720	253	
8	1912	12,672	4,422	715	249	
9	1912	23,940	....	715	...	Temp. Abn.
10	1912	6,324	....	715	...	Temp. Abn.
11	1912	7,430	671	773	250	
12	1912	15,876	1,337	770	257	
13	1912	18,542	2,221	775	230	
14	1912	7,080	843	750	250	
15	1913	4,000	....	710	...	Temp. Abn.
16	1913	4,000	....	690	...	Abandoned
17	1914	2,291	....	610	...	Abandoned
18	1917	....	....	...	...	Abandoned
19	1917	3,000	656	615	233	Abandoned
20	1918	....	....	...	...	Abandoned
21	1917	....	....	...	...	Abandoned
22	1918	1,307	193	603	225	
23	1918	show	....	350	...	Temp. Abn.
26	1919	....	....	...	...	Abandoned
27	1919	show	....	275	255	Temp. Abn.
S.A.	1912	14,143	....	...	...	Temp. Abn.
B.I.	....	....	....	...	...	No information
Total		190,528	16,308	682	252	

Capacities in thousands cubic feet.
Eleven wells still producing. Nine wells abandoned.
Six wells temporarily abandoned.

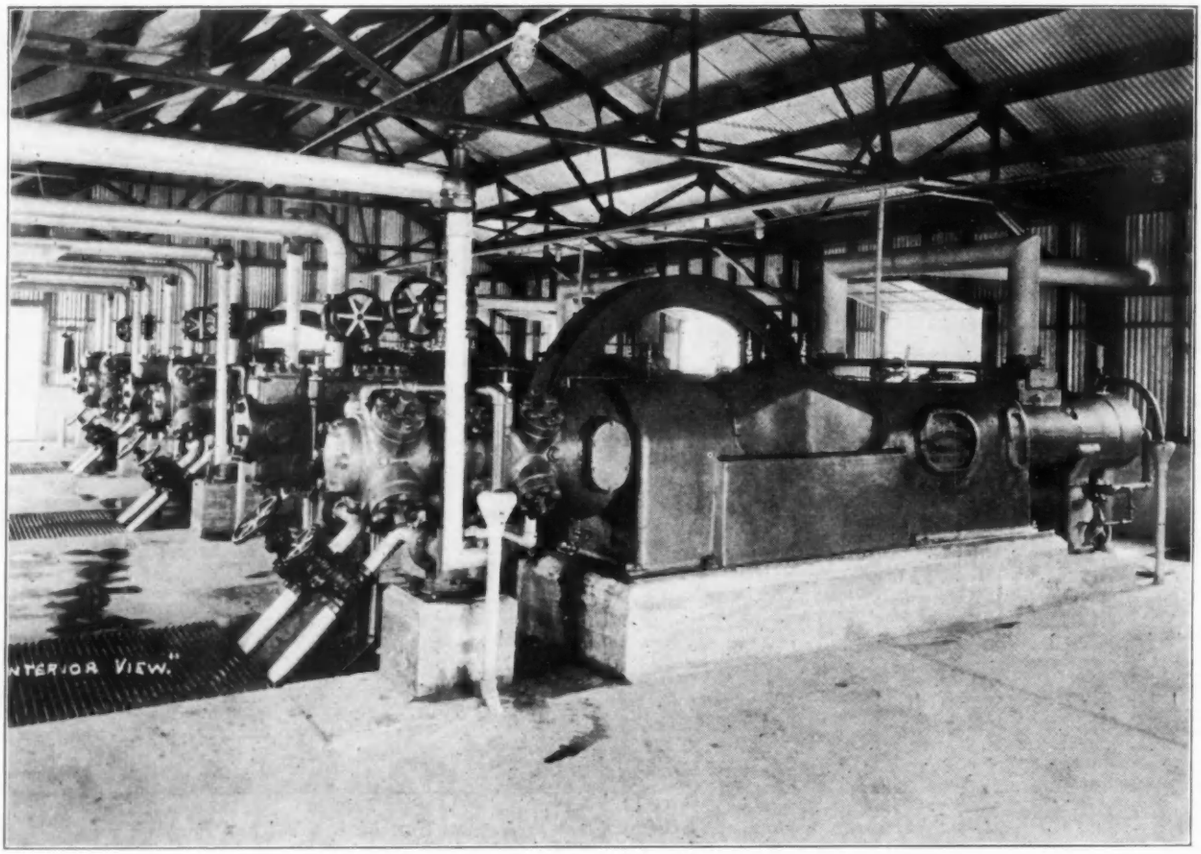
period of 20 years by "order-in-council" under date May 3, 1930, as mentioned in the departmental letter quoted below, to indicate the attitude of the government toward the initiation of the proposed conservation plan:

"Gentlemen: I beg to refer to your letter of January 23 last, addressed to the minister of this department, in which you apply for a reservation, for a period of 20 years, of the natural gas rights in lands shown on the plan you submitted.

"In this connection I am enclosing a copy of Order-in-Council of May 3, 1930, P.C. 935, authorizing this department to reserve for your company, for a period not exceeding 20 years, the depleted sands known as the 'Bow Island gas sands,' in the Colorado formation underlying the available portions of the lands described therein, to admit of an attempt being made by your company to recharge these lands with surplus and waste gas from other fields, subject to the terms and conditions therein enumerated."

Wells Reconditioned

Permission to undertake the work having been granted, and arrangements with other interested companies having been completed, the company set about reconditioning the wells. This was a big task. Some of the wells were 20 years old; many had been abandoned for years and the casings were in poor repair. In the first instance it was necessary to repair only those wells which were still in the producing stage. In some of these the casings were incomplete, the older practice being to draw the intermediate casings upon completion of the well to the gas horizon. The cementing practice was not in common use when the older wells were drilled, and practically all the casings landed on the top of the main gas horizon were uncemented. Although each well had been cleaned out at intervals during the operating period, it was found necessary to set up a rig for the careful examination of practically every well in the area. In some wells casings were parted or broken; in



Interior of Bow Island repressuring plant, Bow River, Alberta, Canada

others it was impossible to effect repairs because of the lost tools and debris in the well; others were found to be in fairly good condition.

Wells found to be gone beyond repair were permanently abandoned, care being taken to plug them effectively. Rotary mud and cement were used also to shut off all migrating waters. Most attention was given to wells in the middle section of the field, the wells in the outlying parts being permanently abandoned, together with those originally drilled into the lower water sands.

Progress was slow and the work arduous; nevertheless, during the summer of 1930, three wells were made ready for recharging operations and satisfactory conditions were established throughout the rest of the field.

Wells used for storing gas were fitted with orifice measuring devices, so that records might be kept of the amount of gas pumped into each well.

Inspection of the gathering lines used in connecting the several wells revealed some collar leaks and evidences of corrosion, which made them unfit for the high pressures which it was expected would be used.

It was deemed advisable right at the outset to relay all field lines to be used in the repressuring experiment, and this was done, every line being acetylene welded and tested at 500 pounds air pressure. All piping work in connection with the plant was so arranged that the operations might be reversed and gas sent out of the field when required.

Provision was also made for the enlargement of the entire installation so that if the experiment proved successful the plant could be increased to commercial size.

Compressors Installed

To overcome rock pressure in the existing wells and ultimately to force back encroaching water having an estimated head of 750 pounds per square inch, it was necessary to install compressors capable of handling high pressures. Three two-stage 200 horsepower, direct driven gas engine compressors manufactured by Clark Brothers, Olean, New York, were installed in an all-steel building and have a capacity of 3,000,000 feet daily at 40 pounds intake and 800 pounds discharge pressure, or approximately 5,000,000 feet delivery at 400 pounds discharge.

Auxiliary equipment installed in conjunction with the compressors consists of a 90 horsepower direct driven gas engine electrical unit which supplies power to three electric water pumps. A 10-inch water intake pipe line, necessary settling sumps and water reservoir, six sets of pipe coils for cooling the compressed gases, gas scrubbers, air starters and other equipment were also installed.

When everything had been made ready, the three wells which were to receive the recharging gas were turned into the main repressuring line; their equalized pressure was recorded as 264 pounds.

On August 4, 1930, the compressors were started taking gas from the Turner Valley field and pumping it into Bow Island wells Nos. 4, 7 and 8, at the rate of about 4,000,000 cubic feet per day.

After 24 hours of repressuring, the reading on the discharge side of the compressors showed 297 pounds indicating that the wells were offering only a slight resistance to the incoming gas, or a head of 33 pounds.

Wells Nos. 4 and 8 seemed more receptive than Number 7. When these wells were brought in Nos. 4 and 8 had open flows of 29,000,000 cubic feet and 12,000,000 cubic

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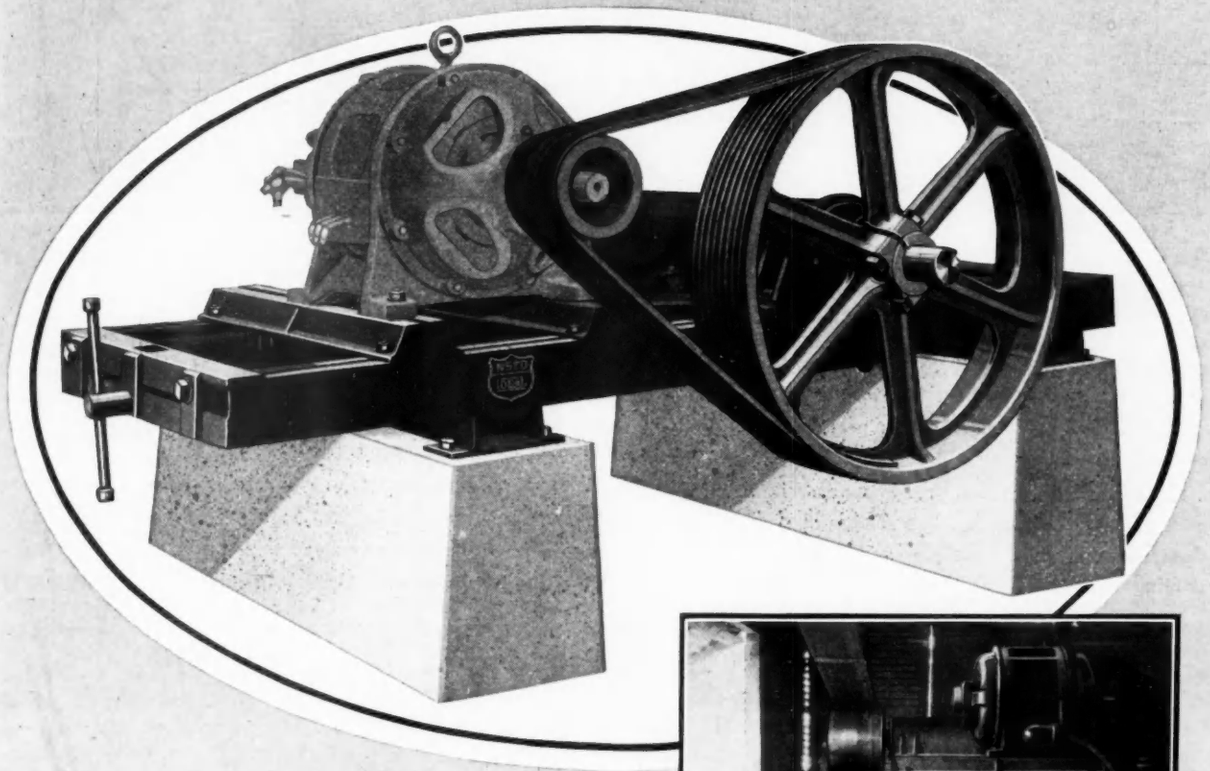
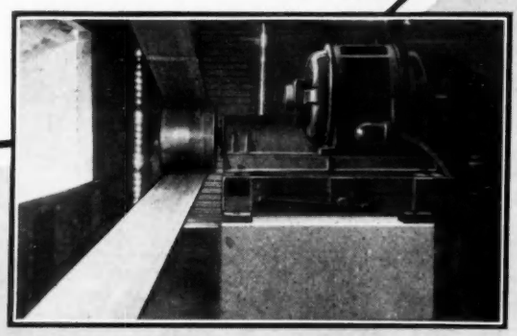
V-BELT COUNTERSHAFT

TYPE "E"





Descriptive Bulletin No.-26 Sent on Request

THE NATIONAL SUPPLY COMPANIES

feet, respectively, while Number 7, drilled in a finer sand, showed only 7,000,000 cubic feet.

Records of the rock pressures of all wells in the field taken on August 3 and again on August 31, 1930, showed the effect of repressuring during the first month of operatoins and are given in the following table:

Rock pressure of wells in the Bow Island field before and after repressuring during the month of August, 1930

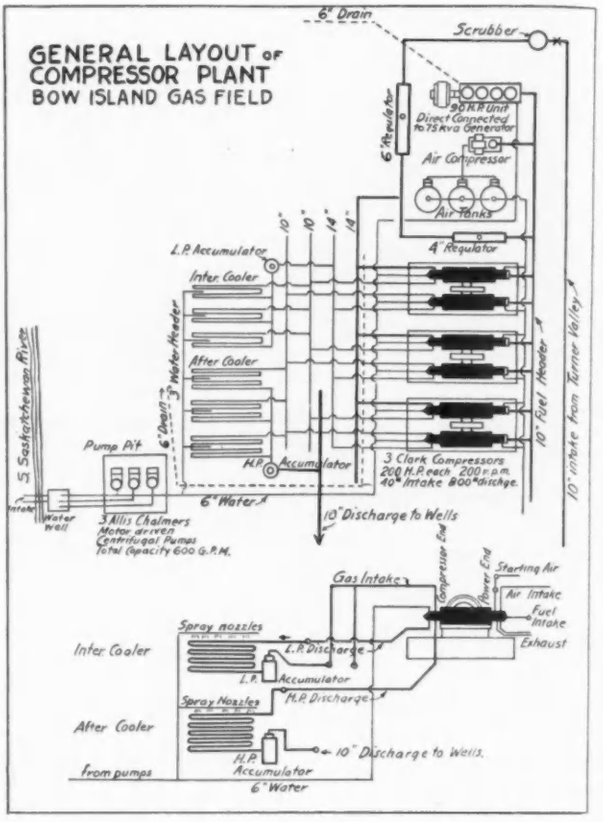
Well	August 3, before repressuring pounds	August 31, after repressuring pounds
No. 1	354	Under repair
No. 4	266	*300
No. 5	59	67
No. 7	265	*300
No. 8	262	*300
No. 9	257	280
No. 10	82	82
No. 11	257	265
No. 12	260	264
No. 13	203	Feeding C. P. R.
No. 14	254	257
No. 15	252	262
No. 19	240	241
No. 22	223	224
No. 27	240	246
S. A.	40	78

* After standing four hours discharge pressure on compressors August 4, 297 pounds; discharge pressure on compressors August 31, 362 pounds.

From August 4 to December 31, 1930, the plant was in continuous operation, with the exception of a few hours shut down to effect minor repairs and adjustments, and during this period 623,000,000 cubic feet of gas were pumped into the reservoir for storage purposes.

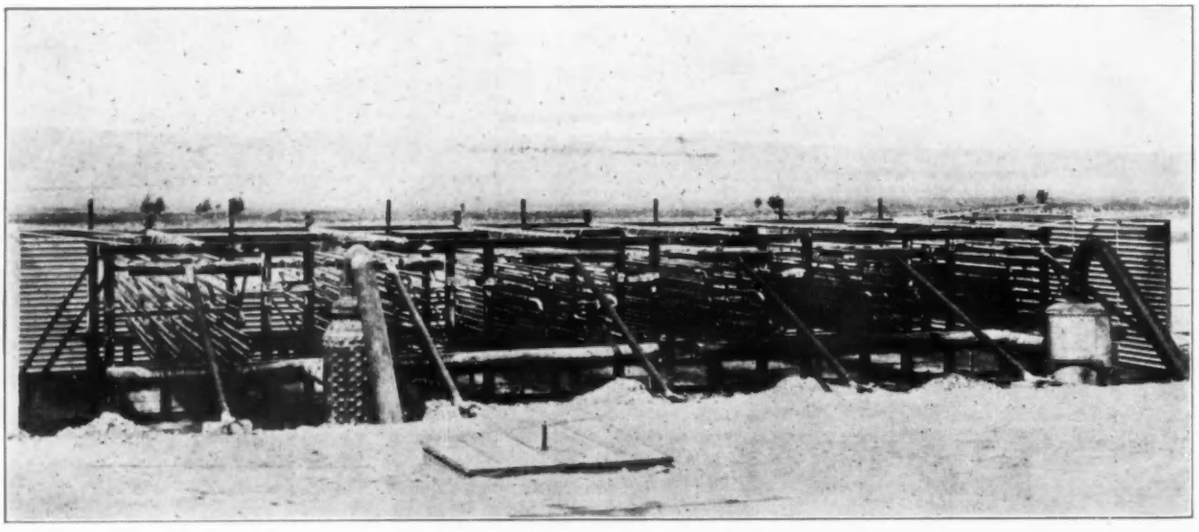
The record by wells for this period as supplied by the company is given in tables 3 and 4.

Some difficulties have been encountered, but the work is going forward steadily. One source of trouble is the condensation of liquid which occurs in the compression and cooling of the gas at the pumping plant.

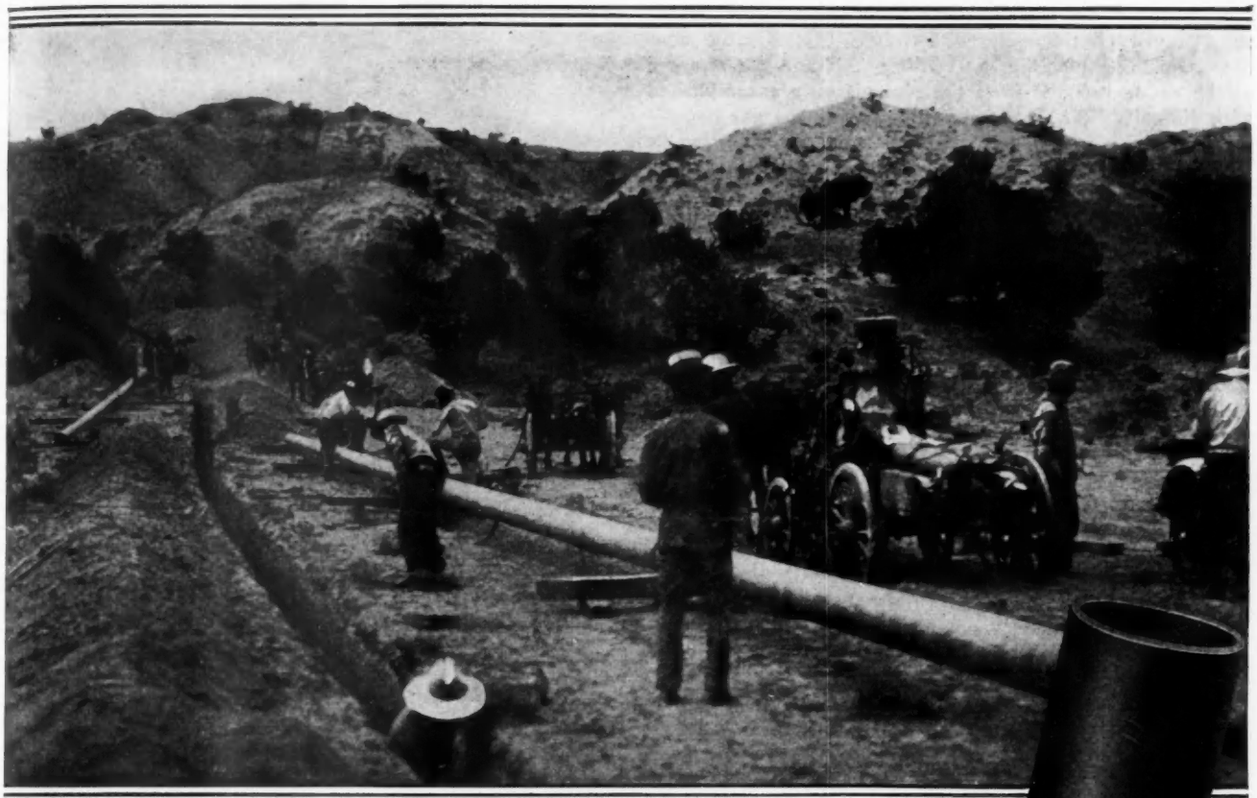


When delivered to the company's pipe line at Turner Valley, the pressure of the gas varies accordingly to the volume required and, although it may enter the main at a pressure of 300 pounds per square inch, there is a considerable drop along the line, as large quantities are withdrawn to supply the various towns en route. When the gas reaches Bow Island the pressure is usually less than 100 pounds per square inch.

At Bow Island the gas is passed through scrubbing towers and then compressed to the pressure required to overcome the hydrostatic head in the old wells. During compression the temperature of the gas rises and the heated



Cooling system of Bow Island repressuring plant



The first natural gas line to cross the Great Divide

A three hundred mile natural gas line tapping the fields in the San Juan basin at the northwest corner of New Mexico and bringing a new resource to the area in which Albuquerque, Santa Fe, and Las Vegas are situated has been laid by the Southern Union Gas Company. This pipe line commands attention as an engineering achievement and a development of economic importance.

Rivers, canyons, forests and rocky ranges—great obstacles had to be reckoned with. Its course lay through dense wilderness, across the Rio Grande and over the Continental Divide. Airplanes dropped markers to flag the right-of-way. Special roads and bridges were built ahead of the giant trucks and trailers that carried and strung out the pipe. The workers who manned these operations, together with others who worked along the line, were exposed to scorching heat—fifty degrees of difference between day and night temperatures in July and August. Yet record time was made and natural gas is now available through the longest pipe line in New Mexico.

As on other undertakings where conditions are exacting and the utmost assurance of unfailing service is required, NATIONAL Pipe was used for the major part of the line. This is but one more demonstration of the confidence of well advised users in NATIONAL—

America's Standard Wrought Pipe

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

Subsidiary of United States Steel Corporation

U S STEEL

NATIONAL PIPE

gas is passed under pressure through cooling coils which are sprayed continuously with water. Considerable condensation takes place in the cooling coils and the removal of the condensed oils from the pipes is only accomplished with difficulty. As a result of this process, the gas is completely dried before being delivered to the absorbing wells.

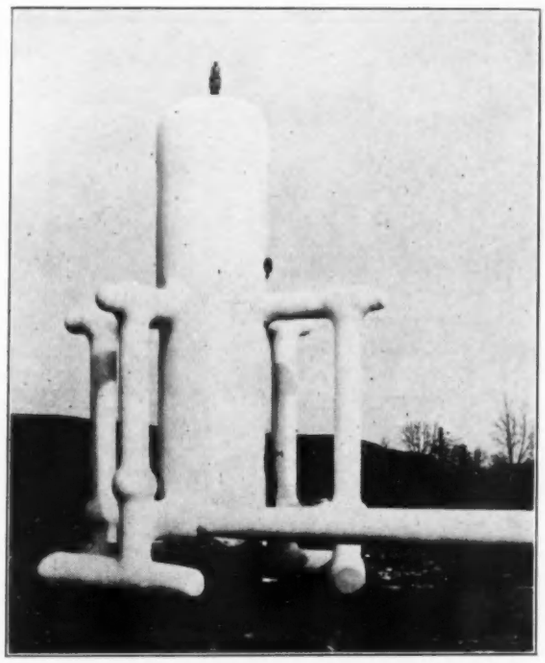
Since April, 1930, considerable progress has been made on wells in the central part of the field.

Five wells, namely, Nos. 4, 7, 8, 11 and 12 have been reconditioned and are at present being used as absorption wells for incoming gas.

Report of Work

Wells Nos. 1, 2, 3, 5, 6 and 13 have been examined, and Mr. Mellon has outlined their respective conditions as follows:

"Number 1. Possibly for sentimental reasons, due to the fact that this well was not only the first originally drilled but one of the largest producers in the field, every effort was made to recondition ad put it into first-class shape for repressuring purposes. Due to its being located on the bank of a coulee, it was necessary to erect a stub-derrick over it in order to properly handle casing and run a standard string of tools. This well, however, like many others in the field, when originally drilled had the intermediate strings of casing removed, hampering further cleaning out or repairing operations. After removing the tubing in the well it was the intention to run a string of six-inch casing to the top of the producing gas sand, cementing same back through the present eight-inch string, but so many difficulties arose, and old tools that were originally side-tracked encountered, it was finally decided to abandon this well temporarily.



A Smith Separator on the line from Turner Valley

"Number 2. This well was originally drilled into bottom water. Considerable difficulty was experienced in filling up old caves, but it was successfully cemented off and now stands permanently abandoned.

"Number 3. The six-inch casing in this well was found to be parted and badly pitted, allowing water to migrate from one string to another. It was decided, after a thorough examination, to abandon it. This well now stands cemented and permanently abandoned.

"Number 5. As two strings of casing in this well were found to be perforated and the well in such condition that it could not be economically repaired, it was cemented off and now stands permanently abandoned.

"Number 6. When running into this well and as previous records showed two strings of tools were left in the hole, it was decided to abandon it permanently. The well now stands cemented.

"Number 13. This well is now under repair. A string of four-inch tubing with packer will be set, when it will be used for repressuring purposes.

"Numbers 4, 7, 8, 11 and 12 have all been repaired and are at present receiving incoming gas."

Repressuring is being continued in 1931 on the same scale as in the preceding year. Work is going forward on old wells that can be repaired and used for repressuring, but

Table No. 3

Quantities of gas absorbed in Bow Island wells, August to December, 1930, by months

(As supplied by Canadian Western Natural Gas, Light, Heat and Power Company, Limited)

Well No.	August	September	October	November	December
	(Thousands of cubic feet)				
1	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....
4	26,508	35,013	36,239	34,456	30,438
7	12,577	15,704	15,186	18,511	18,343
8	63,040	74,769	72,189	66,455	49,470
9	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....
11	.....	.....	.....	891	11,545
12	.....	.....	.....	14,054	27,569
13	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....
19	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	.....
23	.....	.....	.....	.....	.....
27	.....	.....	.....	.....	.....
S. A.	.....	.....	.....	.....	.....
B. I.	.....	.....	.....	.....	.....
Total	102,125	125,486	123,614	134,367	137,365
Discharge pressure at Compressor Plant—	297	384	397	385	384

Table No. 4

Summary of gas absorption records Bow Island wells, August to December, 1930

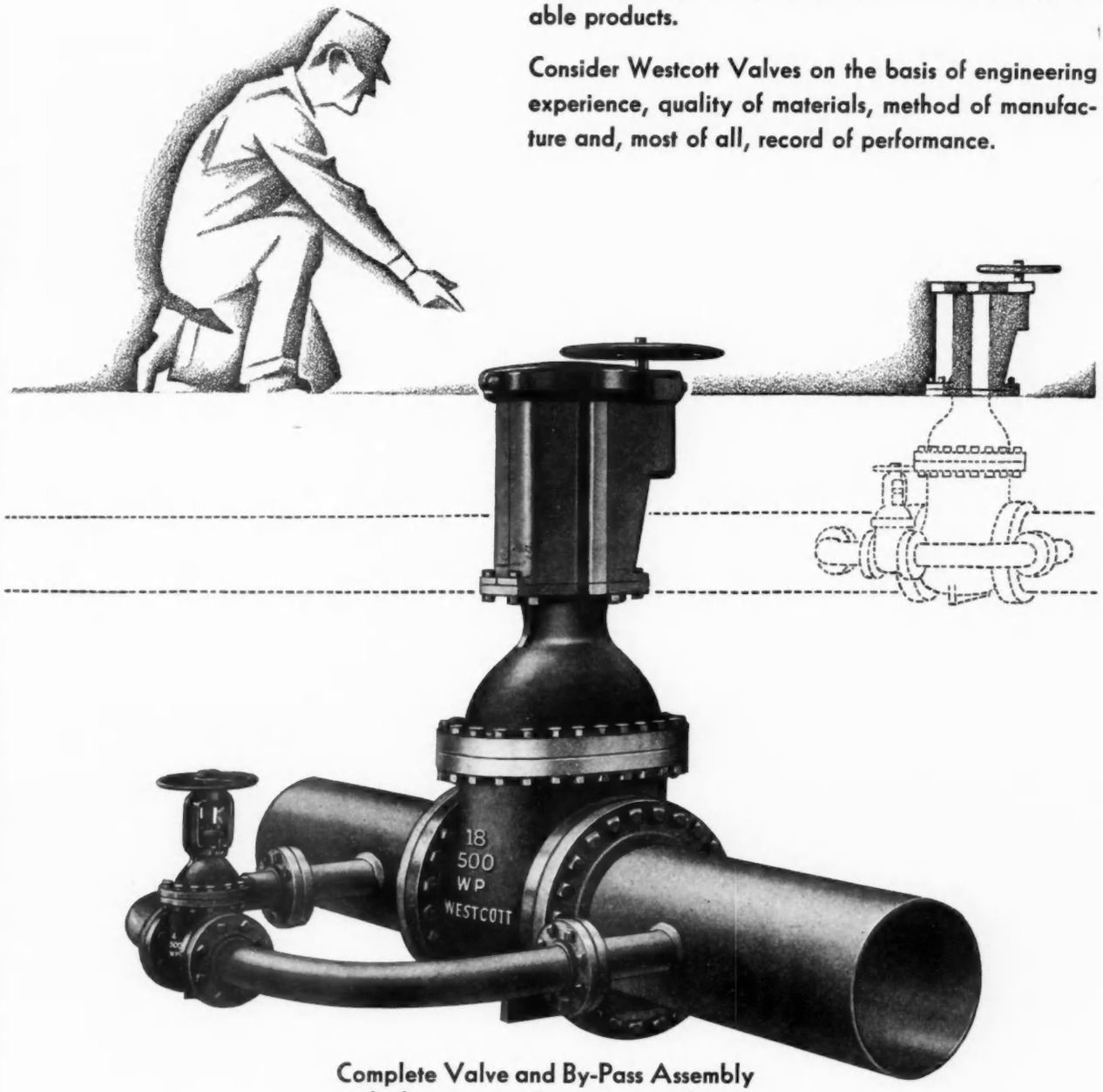
(Supplied by Canadian Western Natural Gas, Light, Heat and Power Company, Ltd.)

Well No.	Quantity of Gas Absorbed (cubic feet)
4	162,654,000
7	80,321,000
8	325,923,000
11	12,436,000
12	40,623,000
Total	622,957,000

GET THIS PROTECTION

The knowledge behind the manufacture of Westcott Valves extends beyond our own plant — it originates in the field, where actual experience develops the ability to design and produce better and more dependable products.

Consider Westcott Valves on the basis of engineering experience, quality of materials, method of manufacture and, most of all, record of performance.



Complete Valve and By-Pass Assembly with the stem and gearing enclosed.

WESTCOTT VALVES

WV-5

Full stocks are carried in all stores of The Continental Supply Co., and at the Westcott Valve Co., East St. Louis, Ill.

the policy of the company is to abandon permanently all wells in the outlying part of the field.

That the experiment has proved a success is shown by the fact that the average rock pressures have increased steadily and that wells have offered but little resistance to the incoming gas. This is shown in the data given in the following table:

Table No. 5
Rock pressures in Bow Island wells, August to December, 1930

(Supplied by Canadian Western Natural Gas, Light, Heat and Power Company, Limited.)

Well No.	August	September	October	November	December
		(Rock Pressure in Pounds)			
1	Repairs	Repairs	Repairs	Repairs	Repairs
2	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned
4	300	376	385	379	379
7	300	376	385	379	379
8	300	376	385	379	379
9	280	303	310	315	317
10	82	85	90	93	95
11	265	275	281	379	379
12	264	282	295	379	379
13	In Use	In Use	In Use	227	Repairs
14	257	260	262	266	272
15	262	270	276	282	284
17	...	207	225	236	182
19	241	237	240	250	253
22	224	228	233	233	229
23	...	...	...	...	...
27	246	249	258	251	257
SA	78	110	118	114	123
BI	Feeding	Feeding	Feeding	Feeding	Feeding
Total	234.9	259.6	267.4	277.5	279.1
Discharge Pressure at Compressor Plant	297	384	397	385	384

Increasing pressures in the outlying wells indicate that the edgewater is being forced back slowly but steadily. Conditions in Number 9 well on the extreme eastern edge of the field are reported to be considerably improved since the beginning of the repressuring work. An experiment of blowing this well for 10 minutes showed little or no moisture present.

But there still remains a large amount of work to be done before anyone can pass judgment on the commercial value of the scheme. Sixteen wells have yet to be examined and repaired; at the present rate of progress, this work will take about two years to complete. With the present pumping equipment, storage of gas can only be carried on at the rate of 4,000,000 cubic feet daily, or 1,500,000,000 cubic feet per year. Success depends on costs. Initial expenditures have been heavy, but if satisfactory results emerge from the work that is now in progress, that is, if the cost of repairing the remaining wells is not too high, it is not unlikely that the company will find itself justified in making the additional capital expenditures required to increase the capacity of the plant to 50,000,000 cubic feet daily, which is about equal to the total present consumption of natural gas in the province of Alberta.

May Be Worth Cost

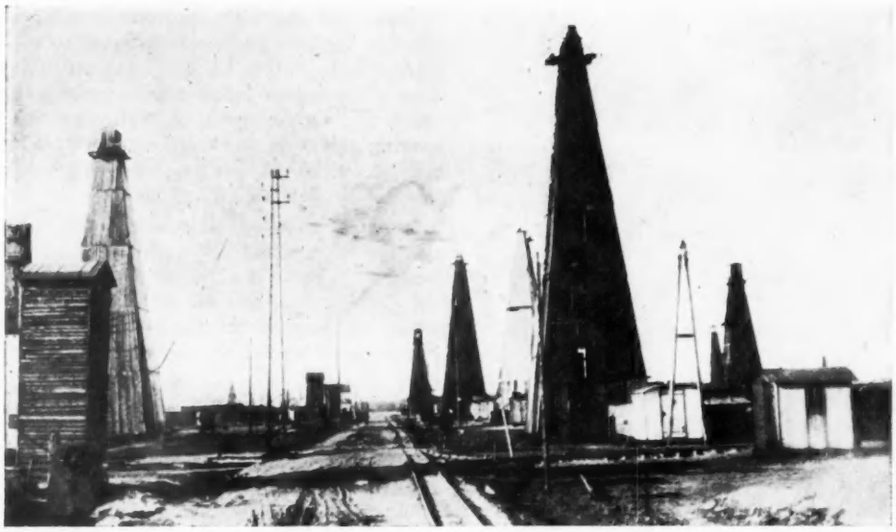
One thing is certain, even with that capacity, the repressuring plant would be taking only a small part of the surplus gas from the Turner Valley field, but if the scheme can be worked at a cost which even approaches the cost of developing new gas fields, its value will be undoubted and its continuance assured.

It is as yet too soon to make definite predictions but, although innumerable difficulties were encountered in the initial stages of the experiment, these were overcome, and the writer understands that the company feels it has been justified in making the experiments involved and that it looks hopefully to the future, confident that it will be able not only to increase the rock pressures to at least the original figures, but in so doing to store in a readily accessible reservoir a very considerable volume of natural gas as a reserve for its consumers in the future.

Canada is proud of the work that Mr. Mellon and Canadian Western Natural Gas, Light Heat and Power Company have done in conserving part of a valuable fuel supply which would otherwise have burned to waste.

View of Turner Valley, featuring Gas Scrubbing Plant

WORLD PETROLEUM IN REVIEW



Pan American Acquires 50% British Company

London, England. — Negotiations have recently been completed whereby Pan American Petroleum and Transport Company has acquired half interest in Petroleum Storage & Finance Corporation, Ltd., of Manchester. The latter company has a capital of approximately $1,250,000.

The acquisition of the company by Pan American Petroleum and Transport Company marks the entry of this company into the British gasoline market. The recent curtailment of imports of gasoline into the United States has caused Pan American Petroleum and Transport Company to find other outlets for its Venezuelan crude. Reports from Manchester are to the effect that Pan American Petroleum and Transport Company recently made an agreement with Petroleum Storage & Finance Corporation for the supply of 30,000,000 gallons of gasoline this year and for further amounts in succeeding years.

Venezuelan Production Continues Decline

Maracaibo, Venezuela.—Decline of production has continued for this country, showing a total of 10,282,727 barrels for March, a daily average production of 331,698 barrels. Daily average production for February was 338,798 barrels.

Venezuela Oil Company led in production with a total of 3,046,572 barrels while Lago Petroleum Corporation was second with 2,942,172 barrels. Gulf Oil Corporation was third largest producer with 1,832,207 barrels.

Property Returned to Richmond Petroleum

Maracaibo, Venezuela. — Statement of John L. Weeks, president of Maracaibo Oil Exploration Corporation, is to the effect that a contract entered into during 1928 covering the sale of 500 acres in Northeastern Venezuela, has been cancelled. Provisions of the contract called for development within two years. Failure of Maracaibo Oil Exploration Corporation to fulfill these drilling obligations has caused the property to revert to Richmond Petroleum Company.

THE PICTURE—*View of Nienhagen Field, in Germany*

Crude Production For March

Mexico City, Mexico. — Total production of crude petroleum for March totaled 2,815,719 barrels, a daily average of 90,829 barrels, according to preliminary estimates of the Department of Mining, Industry, Commerce and Labor. A revision of the estimates for February show a total production of 2,563,986 barrels, or a daily average of 91,571 barrels.

Commission Investigation Decides Exploitation

Buenos Aires, Argentina. —Decision has been announced that new drilling exploitations will be made in the neighborhood of Cacheuta following an investigation by a commission of the state department of those interested in the possibilities of further petroleum exploitation. These operations will begin some time in July.

Governments Agree On Tax Assessments

Paris, France.—An agreement has been reached between Iraq Petroleum Company and the Iraq government in regard to tax assessment on production of petroleum. The government has surrendered its claim to tax the company's foreign profits, but has stipulated that the company is to pay a royalty on a guaranteed minimum production of crude oil plus an income tax on local profits.

Ecuador Crude Petroleum Production

Guayaquil, Ecuador.—Official figures for 1930 show that the total output of crude petroleum for this country amounted to 1,591,666 barrels. Production came from six companies operating in Ecuador. Advance figures place March production at 123,031 barrels.

Soviet Petroleum Trade Increased

Moscow, U. S. S. R.—Activities in the Soviet petroleum industry have been increased with the signing of contracts recently for the delivery of 3,000,000 gallons of kerosene a month to Kwang-Hwa Company of Shanghai. Contracts have also been entered into

Staff residences, Anglo-Persian Oil Company, Abadan, Persia

whereby gasoline and kerosene will be supplied to the Brazilian markets. Indications from the 1930 imports of petroleum products to Italy show that an increase will likely result from this quarter also.

Large scale operations in India for the Soviet petroleum trade have come as the result of Russia's decision to support financially Atlas Petroleum Products, Ltd., of South Africa, so that it can deal better with the competition that it has had during the past three years.

Roumanian Crude Production Increased Bucharest, Roumania. — Crude production for March amounted to 3,850,000 barrels as compared with a total of 3,640,000 barrels for February, according to recent reports from the government department.

Tariff Revision Reduces Surcharge Havana, Cuba.—A presidential decree issued in March caused a revision of import duty on petroleum and reduced the emergency surcharge from 10 per cent of the import duty and other taxes on petroleum and petroleum products to one-hundredth of one per cent. This decree became effective for shipments made after March 14, 1931. The surcharge of 10 per cent of the former rates of import duty became effective on February 3, 1931.

Soviet Foreign Trade Horace Liveright, Inc., of New York, has recently published a study of Russo-American trade under the title Soviet Foreign Trade, Menace or Promise, by J. M. Budish and Samuel S. Shipman; price $2.50.

The book is sponsored by Amtorg Trading Corporation, of New York, the principal organization engaged in carrying on the trade between the United States and the U. S. S. R.; and purports "to give a rounded picture of Soviet foreign trade and particularly its trade with the United States." Actually, of course, it is intensely partisan, its obvious purpose being to allay the alarm of American producers aroused by recent public discussion of the alleged "dumping" of oil, grain, lumber, manganese, and other Soviet products.

The credit position of the Soviet Union is also boosted wherever opportunity offers.

Nevertheless, it is well worth reading, if for no other reason than for the vigorous mental exercise which it affords. It is of particular interest to oil and supply men, among whom the closest contacts between Russia and America are now being made in connection with the purchase and employment of American machinery and engineering talent in the execution of the Five Year Plan as applied to the oil industry, oil being the very life blood of the Bolshevik state.

In one of their opening paragraphs, the authors propound the question, "Is Soviet foreign trade a menace or a promise?" Their concluding sentence ends with the answer that "the mutual benefits of Soviet-American trade, both in its development up to the present time and in its indicated future trend, cannot be questioned."

Intervening pages abound with statistics, discussion, and argument relating to Soviet-American trade, including chapters devoted to the importation of Russian commodities into the United States, the "dumping" of Soviet products, the position of labor, particularly convict labor, in the U. S. S. R., and the relationship between Soviet foreign trade and the Five Year Plan. The book is extraordinarily well written in that it presents an argument with skill and ability of an order of which the most able advocate might well be proud.

We are told, for example, that we sell to the Soviets more than five times as much as we buy from them; and that we now sell to the Soviet Union three times as much as we formerly sold to Czarist Russia, our total foreign trade having increased by only 79 per cent in the interval.

We are promised that "in its broad outlines the development of Soviet foreign trade will not bring it into competition with that of this country. The exports of the two countries will continue to be complementary rather than competitive, with the U. S. S. R. expanding its imports[1] to a great extent in raw materials not exported by this country. On the other hand, the Soviet Union will purchase increased quantities of the machinery and equipment of which the United States is one of the leading producers."

With reference to the Five Year Plan, it is said that "To accomplish this program the coal industry will have to be mechanized and many new mines will have to be sunk. A great part of the new equipment for the coal industry will have to be imported and it is obvious that the development of the industry will have to be continued for years after the conclusion of the present five-year period.

"The same applies to the petroleum industry. * * * The plans now call for increasing the output to about 40,000,000 tons in 1933.[2] Refining operations will be even more intensely increased. Consequently a great deal of equipment for the various branches of the industry will have to be imported."

All of which sounds reassuring to American manufacturers of oil well supplies and refining equipment, but less so to the American producer and exporter of petroleum products.

Almost any American manufacturer, producer, economist, farmer, or average citizen, can read this book with profit, provided he keeps in mind a broad conception of world trade as a whole and remembers that America also produces and exports raw materials, such as oil, coal, grain, and ores, as well as machinery and manufactured goods.

As the authors say in their opening paragraph, "The time when the Soviet Union could be considered a negligible factor in world economy * * * has long since passed."

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[1]Apparently, the word **exports** was intended to be used here, as it is said elsewhere in the book that "the exports of agricultural products and industrial raw materials (grain, furs, flax, oil, lumber, ores, etc.) of which the European countries and the United States (?) are in need can be developed———" Editor.

[2]We are informed that production plans for 1933 have since been increased to 46,000,000 tons, or more than 1,000,000 barrels per day at the end of the period. Editor.

a new at Kilgore!

The CORBETT CORPORATION KINZBACH TOOL COMPANY

In order to furnish fast, convenient service to our many friends and customers now operating in the East Texas area, the Corbett Corporation and the Kinzbach Tool Company have jointly opened a New Store at Kilgore, Texas. Large and complete stocks of the many lines of special material and equipment manufactured and sold by these two Companies will be maintained at all times. H. M. (Red) Wheeler, for many years a driller with the Texas Company, is in charge of the New Store.

No effort will be made to carry a complete line of oil field supplies, but every effort will be made to have on hand a complete inventory of the lines on which these Companies have specialized for years, some of which are listed to the right. All specialties manufactured by the Kinzbach Tool Company will be carried, and several other lines of outstanding oil field specialties will be stocked.

Call on this New Store, day or night, for anything in our lines and you will get fast, cheerful, appreciative service.

During the years The Corbett Corporation has been growing from a one-man business to its present position in the Industry, it has earned a reputation for getting things done in a hurry, and right the first time. High quality products at lowest possible prices have considerably enhanced this reputation. But the outstanding feature of what, for lack of a better word may be called its "service," is a quality of cheerful friendliness, liberally mixed with every deal, that has converted a host of "first-time" customers into permanent friends.

Walk in and try it!

ON TAP AT KILGORE

Among others, the following lines of material and equipment will be kept on tap at Kilgore in liberal quantities. On your next requirement for any of these items, give "Red" Wheeler a chance to deliver a sample of Corbett Corporation or Kinzbach Tool Company "Service". You'll like it and come back for more.

BOILER TUBES . . . Oilfield type, all specifications.

STAYBOLT IRONS . . . All specifications.

COUPLINGS . . . All specifications.

BULL PLUGS . . . All specifications.

SWEDGE NIPPLES . . . All specifications.

FORGED STEEL FLANGES . . . All specifications.

SEAMLESS STEEL PIPE . . . Extra strong, and Double Extra Strong. Also seamless mechanical tubing.

SEAMLESS FORGED PUMP LINERS . . . Ground and polished, all specifications.

SLUSH PUMP VALVES . . . Forged steel, for all makes of pumps.

KINZBACH PATENTED WHIPSTOCKS . . . All sizes.

KINZBACH MILLING TOOLS . . . All types and sizes.

. . . And other selected specialties manufactured by the Kinzbach Tool Company and other manufacturers.

The CORBETT CORPORATION
KINZBACH TOOL COMPANY

SAWYER and WINTER STREETS — P. O. BOX 42 — HOUSTON, TEXAS

Letters to the Editor

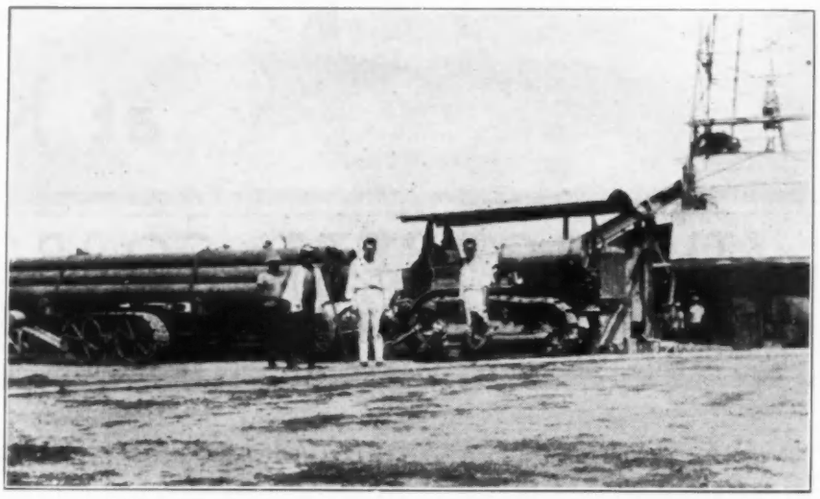
▼ ▼ ▼

Dear Sir:

Just how well have you remembered your geography? Where is the island of Sumatra? Can you locate the city of Palembang, Sumatra? How would you like to live in a place where tigers roam around your house while you are sleeping and have snakes for a bed partner? Not very well I am sure. Nevertheless, these are a few of the experiences met with by many of the oil field men journeying to that far off outpost of oil. Not only an outpost of oil but an important one at that. You have heard of the "flying fishes" and listened to "the dawn come up like thunder" on "The Road to Mandalay," and it is in Singapore on your way to Sumatra that you can spend a brief stay and experience some of the thrills that you have heard and read about. Such have been some of my experiences in the seven years that I have been employed as a driller for Nederlandsche Koloniale Petroleum Maatschappij (can you pronounce it?), or in other words Standard Oil Company of New Jersey.

The writer and three other single men were located on the Loeboek Batoe Concession about 200 miles from town. In reaching the camp on this concession the only means of transportation, aside from walking, was by boat. After the landing point was reached there were still about eight miles to travel over a narrow gauge railroad. This railroad was previously used on a timber concession and taken over by the Koloniale as it is commonly known. The cars were short-bodied and four-wheeled. Coolies were used as motive power in transporting material and passengers. I might say that there were no brakes on these cars other than a stick used for that purpose by one of the coolies used in pushing. They have very little sense of danger, seemingly, and of course they have on many occasions made the passengers' hair stand on ends believing that any moment the cars would head for the jungles instead of the curves they were facing. Generally, any visitors we would have, made their appearance after night and their trip was made over this railroad without lights. Luckily, there never happened to be any fallen trees or elephants on the track.

On one occasion, however, one of the men was leaving camp bright and early, and while going down one of the steep grades ran into a water buffalo. The impact of the collision knocked the buffalo into the ditch and the coolie motive power was thrown in all directions, breaking the leg of one coolie. No serious damage was done to the buffalo. It would be almost impossible to hurt them; they have as a nickname—rubber cows. Another reason, possibly, that none of the larger animals were ever seen along the tracks was the noise made by the cars on this railroad. It is a surprising fact to know how far sound travels after night in the silent jungles. At the camp we could generally hear the cars long before they were in sight, and when we heard them after night we knew we were going to get some mail or visitors.



Hauling material for a well on the Island of Madoera. H. W. Rhinelander, author of this letter, is standing between the tractor and the trailer

Pendopo Camp in Sumatra. Gasoline plant in the background

The Loeboek Batoe concession is located near the Djambi district of Sumatra. It is in this part of Sumatra that a tribe of natives known as the Kubus live. It has been stated on numerous occasions that they construct their homes up in trees high enough from marauding animals. They wear little or no clothing.

All materials used in drilling the four wells on this concession was transported over the narrow gauge railroad previously mentioned. As much of the material as was needed was sent up during the wet season by boat to the river landing. During the dry season the river was generally so low that on many occasions even small motor boats could not navigate the stream.

When a breakdown did occur it usually meant two or three weeks shut down waiting for necessary repairs; and it was during this time that, owing to the fact

(*Continued on page* 89)

All Steel

The only answer to the question of breakage ✦ ✦ ✦ ✦

TRIMO

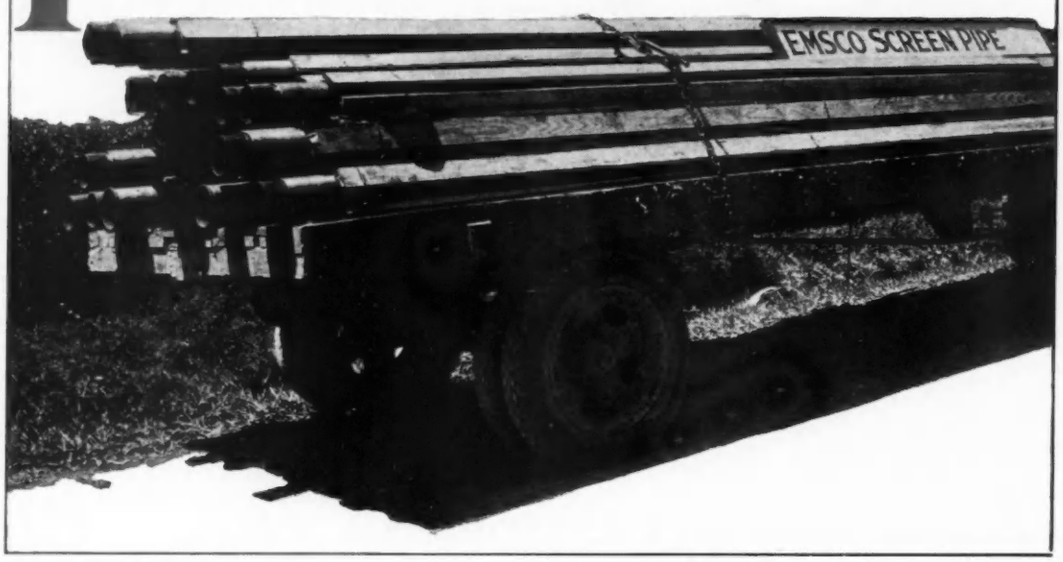
YOU won't find a single weak part in a TRIMO pipe wrench, because you won't find a single part that isn't made of selected steel. From the mighty drop forged handle to the heat treated movable jaw, TRIMO is made to give you more strength, more safety and more easy work than any other pipe wrench regardless of type or cost.

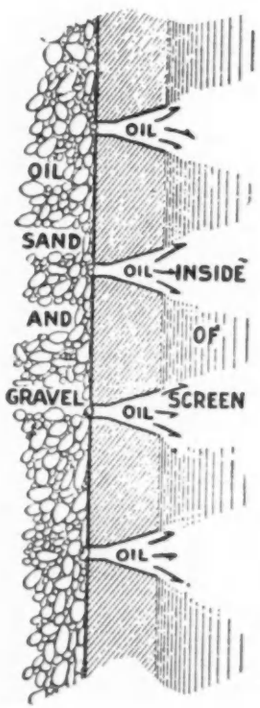
It goes without saying that all steel TRIMO is thoroughly guaranteed against defective parts—a guarantee not confined to any one part, but covering the whole wrench and for all time.

All Steel TRIMO Pipe Wrench Handle Drop Forged not Cast

Made by Trimont Mfg. Co., Inc., of Roxbury (Boston) Mass., sole producers of TRIMO pipe tools and TRICROME cutter wheels.

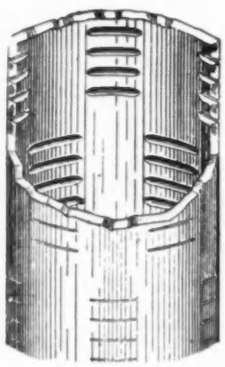
HERE'S *the screen to set—and*





. . . a hard combination to beat for maximum flush and pumping production

This cut shows the slots in EMSCO SCREEN PIPE cut in groups of four slots, groups being spaced four inches apart and staggered so as to weaken pipe very little.



EMSCO Screen Pipe is getting the big play in East Texas because it is exactly what its name implies—*a screen made from pipe with no wrapping or inserts to become loosened.* It offers maximum smoothness, ease of setting, ease of pulling, and length of life. It can be rotated or spudded reasonably without risk of injury—a real advantage when setting in rough, imperfect wells. Under scientific tests, Emsco Screen Pipe retains 80% to 85% of the original collapsing strength of the pipe of which it is made. As shown in the exaggerated illustration herewith, slots are cut parallel for a distance of approximately ½ thickness of pipe, and then branch into a "V" shape. Anything that enters a slot is carried through, resulting in maximum production. Slots are made in staggered groups, sufficient in number to allow the full capacity of the pipe every few feet. Furnished in any size from 2½-inch to 15½-inch, either with regular couplings or flush joint. Flush joint is easier to set and pull and gives more clearance because of smooth outside surface. May be had in any mesh from .010 to .10 of an inch or larger.

Distributed Exclusively by Houston Oil Field Material Co.

MANUFACTURED BY
EMSCO SCREEN PIPE CO
HOUSTON, TEXAS

HOUSTON OIL FIELD

1816 Nance Street

REFUGIO ◄◄ **HOUSTON** ►► **KILGORE OVERTON**

HERE'S how to set it !

(and cement casing at same time)

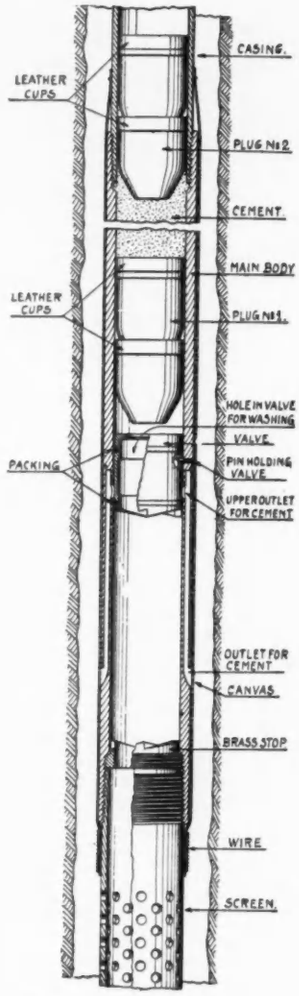
Another load headed for Kilgore

TO complete a well with maximum speed, and to get maximum production after completion, set your Emsco Screen Pipe (or other screen) as follows:

Make up screen on final string of casing, using an R-S-M Full Hole Cementer between screen and casing. Screen to be same size as casing. Lower casing into hole opposite casing seat, and cement according to instructions. Tear down and move rig to new location, if desired. When cement is set, use a special T-I-W Fish Tail Bit, with large wash hole, on tubing to drill out two wooden plugs. Drilling in can be accomplished with small portable drilling rig. Well is then ready to bring in through special fish tail bit and tubing. This procedure saves from three to five days drilling rig time on every well.

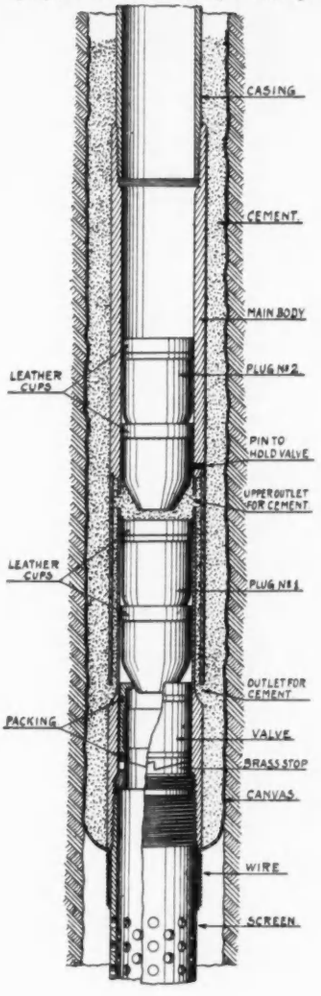
The R-S-M Full Hole Cementer makes it possible to set screen the same size as your oil string; to cement casing above screen after washing well thoroughly with clear water; to expose a large screen area to the producing sand; to drill deeper if desired without cutting out screen; to eliminate damage to casing seat because only two wood plugs to drill up; to set larger size insert screen if necessary at later date.

The R-S-M Full Hole Cementer has a splendid record of success behind it in practically all sections of the Gulf Coast. One of the largest East Texas wells was brought in as above described. Write for full particulars, or inquire at any Houston Oil Field Material store.



Above cut shows Plug No. 1 about to shear pin holding valve. Valve then lowers to brass stop, uncovering upper outlets for cement.

Cut below shows cement forced through cement outlets and around pipe. Plug No. 1 prevents cement entering screen. Canvas forces cement upward. Only two wooden plugs, brass valve and stop to drill up.



MATERIAL COMPANY

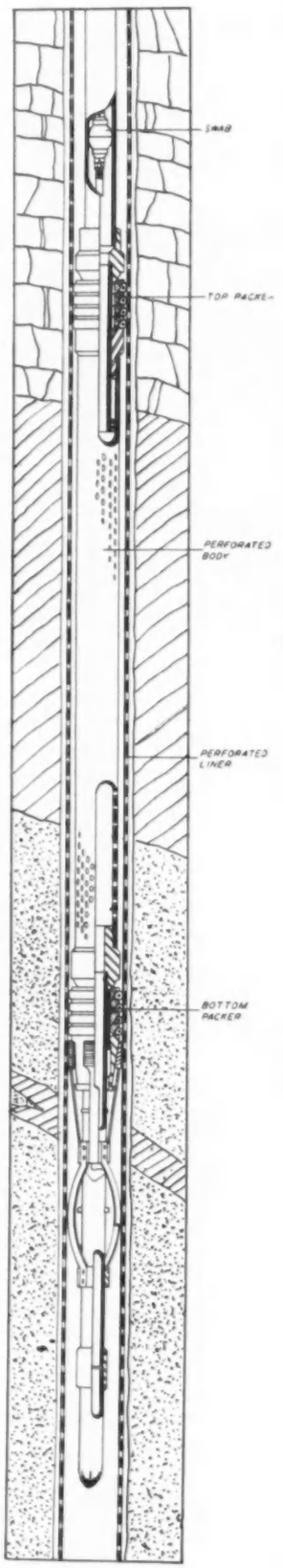
HOUSTON OIL FIELD MATERIAL CO.,
1816 Nance Street,
Houston, Texas.

Gentlemen:—Please send me full and complete information on the R-S-M Full Hole Cementer and Emsco Screen Pipe.

Name .....

Company ..... Position .....

City ..... State .....



P. O. T. Well Cleaner

New Method Wells Used in West

DEVELOPMENT of a device for cleaning out wells which are prevented from producing by a clogged sand condition, and for bringing in wells in low pressure fields has been perfected and successfuly used in California, the arrangement being an adoption of two conventional ring type packers which are connected by a joint of small perforated pipe and run into the well on tubing.

The assembly was recently used in a well at Playa del Rey and a natural flow was obtained where previously no production at all was possible. The action of the well, following the cleaning out operation, proved that the water shutoff above the oil zone was successful and that failure to produce had been entirely due to clogging of the producing sand while drilling and completing the test.

Development of the assembly was brought about by the theory that many wells fail to produce satisfactorily because of a virtual sealing off of the oil zone while drilling or while attempting to hold the well under control with mud and other agencies. The average high pressure well will readily clean itself out and allow production to come from the entire body of oil sand, but the failure of a large number of wells probably should be attributed to their inability to clean themselves out when placed on production. The formation pressure is not great enough to push a full column of fluid from the hole and to bring about a gradual forcing out of the mud which lines the sides of the hole.

More properly, it might be stated that that portion of the producing zone which may be open can not exert a pressure great enough to offset the back pressure of the fluid column and the fluid level may fall considerably short of the surface. In many cases, only the top of the oil zone is open, the entire lower portion of the producing formation being virtually useless. When cleaned out, the whole producing zone is utilized to raise the column of fluid and a flowing well is not an unusual result.

The special tool or assembly, which was designed and manufactured by Pacific Oil Tool Company, Ltd., of Los Angeles, was perfected on the theory that the producing zone can be cleaned best by concentration on a small section at a time. Attempts to wash or clean the full length of the liner are often dissipated by the action of such a large space.

Two Packers Used

Two standard five-inch packers were used on the first device, the connection having been made by a 20-foot joint of 3⅛-inch screen perforation. The bottom packer employed the conventional slip arrangement, while the top packer did not use slips. The bottom packer was the usual complete type, using below the packing assembly a bull plug and the regular spring rein.

The principal object was to run the assembly into the hole and set it so that all of the formation except that small part which was being cleaned would be packed off. Ob-

For Cleaning of Sand Coast Fields

viously, the thin level which was being cleaned would be "packed in" and the full effects of the cleaning operation would be confined to the 15 or 20 feet of formation between the two packers.

The tool was used in Wood Petroleum Comporation's Number 1, a well in the Playa del Rey field which failed to flow soon after completion. The action of the well indicated that the water had been shut off satisfactorily, but there was evidence that the producing zone was not functioning properly. The fluid level remained far below the surface with that portion of the producing zone which was open unable to cause a natural flow. The pressures had never been unusually high and the small variation in the fluid level pointed to a clogged sand condition.

The well had been drilled to 5891 feet and completed in the deep zone. A string of 6⅝ inch casing was cemented over the producing sand at 5698 feet. The liner arrangement was far from ideal for cleaning out operations, consisting of 83 feet of five inch A.P.I. perforated on bottom, 110 feet of 4¾ inch immediately above and 41 feet of five inch blank on top. The variation was a handicap but the difference in size was not great enough to prevent the one tool from adapting itself to the particular job. The liner was hanging from a point considerably above the shoe of the 6⅝ inch water string.

The tool was first run in and set on or near bottom. After the swab was run twice, the fluid level rose from 4000 feet to within 1600 feet of the surface, with only the 20 feet of formation being cleaned to exert the pressure. The assembly was run on standard 2½ inch tubing and the cleaning action was brought about only through swabbing. By concentrating on the bottom 20 feet, the formation was given a chance to clean itself through the expulsion of whatever mud and water that had been forced into the sand while drilling. Additional swabbing brought about a flow of water and mud for some time. A large quantity of foreign matter was forced from the well by its own action, following the swabbing through the tubing. The bottom 20 feet of producing zone soon produced only clean oil, and it was evident that the mud and water had been forced from the narrow body between the two packers.

The assembly was then moved up and set to clean a small portion of the producing zone above the bottom 20 feet. Swabbing was continued until the thin section of formation between the packers was showing only clean oil. This second section, as in subsequent sections, gave up a large quantity of drilling mud, weight material and water. The swabbing action never failed to allow the sand and the aid required to force out this matter.

Water Analyzed

As proof that the mud and water forced from the walls of the formation had been placed there through drilling operations, an analysis of the water recovered was made. It was found to contain less salt than the drinking water used by the city of Venice. The mud and weight material were also easily recognized.

The tool was moved up the hole by easy stages and the entire producing formation cleaned. A full 20 feet of sand was not cleaned each time, the amount of formation included being largely determined by the condition of the sand at various levels.

After the full producing formation had been cleaned, the well was placed on production and flowed naturally, where it had ceased to flow at all prior to the cleaning out operation. The cut was low and full proof was established that original failure of the well had been caused by a poor sand condition. The tool was pulled complete and placed in readiness for further work.

The new cleaning process differs radically from the usual run of washing methods, in that it cleans by aiding the formation to do what it is often unable to do through lack of pressure. A simple washing of the hole may merely temporarily open the liner, the mud and water re-entering the hole at some later date. Washing does not necessarily remove the mud and water, while the newer method apparently causes the formation to force out the mud and water by its own force.

The theory of concentrating on a very thin section of the producing zone is entirely new, at least so far as aiding the formation to clean itself is concerned. Heavy pump pressure is often used, but the tendency to drive the mud and water into the producing zone is perhaps more marked than that which forced it out. Even when this practice is followed, large sections, if not all, of the producing zone is affected at a single operation.

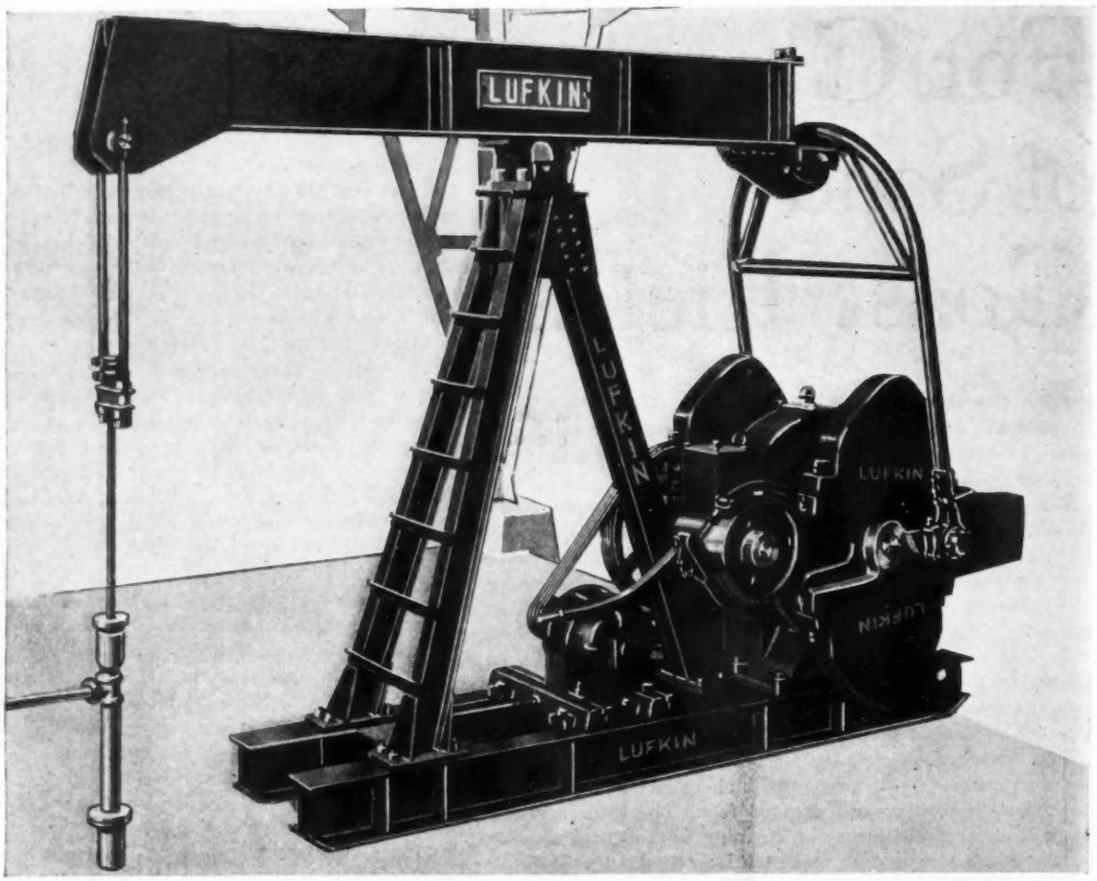
The packing off is complete, the only chance of the cleaned portion below being affected by the upper portion of the formation coming while the tool is being re-set at a higher level. This action is negligible, however, and the upper section being cleaned probably includes a small part of that just previously cleaned below.

HOME-MADE SHOP-FAN

An ingenious workman in Caribbean Petroleum Company's case and can factory at San Lorenzo, Venezuela, whose duty it is to work with hot molten solder used in the manufacture of "petrol tins" has devised a home-made fan which serves very well to promote his personal comfort. Fortunately, the station to which he is assigned is situated immediately below one of the main overhead drive-shafts by means of which power is transmitted throughout the plant; so he has a source of power conveniently at hand. The use and application of his idea is not restricted to refining operations, as similar conditions obtain in many oil field machine shops, not only in tropical countries but also in the United States.

The Venezuelan workman's fan blades are made of one-quarter-inch sheet steel, although galvanized iron, or sections cut out of discarded tank staves would serve just as well. His fan spokes are fashioned from one-inch by one-quarter-inch strap iron about 20 inches long, to which the fan blades are bolted. These spokes are bent in the form of a semi-circle to fit snugly around the shaft. Holes are drilled in the spoke ends, through which bolts are fitted to clamp the spokes securely to the shaft. The blades of the fan installed at San Lorenzo are about 16 inches wide by 22 inches long. The number and size of the blades required will vary with the speed of the shaft and the individual requirements in the way of ventilation. If the shaft makes only a limited number of revolutions per minute, larger blades will be required. If it rotates rapidly, smaller blades will be suitable. There is no limit to the number of pairs of blades which may be installed, except that of the length of the shaft not used for other purposes.

LUFKIN TWIN CRANK UNITS



Compactness . . . Portability . . . Efficiency

Combined in One LUFKIN UNIT

Compactly mounted, upon structural steel skids, the new Lufkin Twin-Crank Unit Assembly represents the ultimate in Simplicity, Compactness of Design and Portability. These highly desirable features combined in *one unit assembly* fulfills the need for an efficient unit that can be easily transported from well to well and installed on the derrick floor.

This new Lufkin Unit is equipped with Sykes-Herringbone continuous tooth gearing; Trout counterbalanced Cranks; Trout dust-proof, oil-bath Pitmans; Lufkin, tripod design, Samson Post and "I" beam type Walking Beam, rigidly secured to a structural steel bed plate of ample size. The assembly is furnished complete from prime mover to polish rod for either electric motor or gas engine drive with house for belts and motor.

Lufkin Engineers have incorporated into the design of this new unit all of the features found desirable for pumping service after years of experience pioneering geared production equipment in the oil industry. That Lufkin Engineers have demonstrated their ability to produce equipment having outstanding merit is attested to by the satisfied users of over *two thousand* Lufkin Production Units since 1924.

LUFKIN FOUNDRY & MACHINE COMPANY,
Lufkin, Texas.

Please send me—no obligation—Full description of the New Lufkin Twin-Crank Unit Assembly.

Name .....

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Manufactured at Lufkin, Texas, by
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Markets • Production • Crude Prices

H. J. STRUTH, ***Staff Economist, Houston, Texas***

Production Increase Again Recorded in East Texas Area

Despite the fact that an agreement had been reached in East Texas, whereby the production limit was set at 130,000* barrels daily, new wells brought in last week increased the output of that area to a new high record of 298,400 barrels daily. This represents a gain over the preceding week of 50,000 barrels and places the excess over allowable production at 168,000 barrels daily. Proration umpires working in cooperation with the railroad commission have been taking well gauges in the various East Texas districts, and until this work is completed little can be done to cut back excessive production. In the meantime, new wells are being brought in at a rapid rate and the production curve is surging upward to the extent of 50,000 barrels a day.

As a result of last week's further sharp gain in production in East Texas, production for the state increased to a total of 922,500 barrels, or about 190,000 barrels above the new allowable figure. Since practically all of this excess is credited to East Texas, it is seen that all other districts in the state are maintaining production schedules at about the limits set by the railroad commission. Nevertheless, with a fairly good demand for crude in sight between now and October 1, it is apparent that Texas producers will experience an actual demand during this period of more than 800,000 barrels daily. The adjusted allowable production figure for Texas is 732,000 barrels daily, or about 68,000 barrels below what appears to be the probable demand, exclusive of stock withdrawals. With such an outlook, it is readily seen that a cut-back of 168,000 barrels daily in East Texas would facilitate matters in other sections.

Just how over-production will be curtailed in East Texas is problematical, particularly since there seems to be no let-up in drilling. Last week this area reported the completion of 57 new producing wells, credited with a combined initial production of more than 400,000 barrels daily. With new wells coming in at this rate, it is difficult to see how it will be possible to effect any degree of control over production within a reasonable period of time. In fact, it appears as though drastic means will be necessary to cut back East Texas production to the limit of 130,000 barrels daily. In any event, this will not be an easy matter and producers in other sections of the state will undoubtedly continue to suffer demoralized market conditions until curtailment is actually placed in force in East Texas.

With taking of potential well gauges completed in the Oklahoma City field, production of the state is gradually becoming stabilized to conform to allowable figures. Oklahoma's daily average production last week showed a decline of 39,800 barrels, bringing the total output down to 545,300 barrels. With the allowable for Oklahoma City increased to 165,000 barrels, a boost of 40,000 barrels for the state, the allowable for Oklahoma is now about 505,000 barrels daily. Accordingly, the indicated excess for last week amounted to about 40,000 barrels. The output of Oklahoma City was reduced last week to about 150,000 barrels, against more than 192,000 barrels during the preceding week. This accounts for the decline reported for the state. Kansas production has shown practically little change during the past few weeks, being maintained at a rate slightly below the indicated economic limit of 114,000 barrels.

California operators are becoming somewhat concerned over the East Texas situation, realizing that increased shipments from that area are bound to cut into coastwise shipments of California oil. With crude and gasoline prices in California at present depressed levels, there is little or no likelihood, however, that East Texas crude or gasoline will be a factor in competitive markets on the Pacific Coast. The situation in California offers little hope of improvement in the near future, due to the fact that most of the major marketing companies are determined to fight competition to the finish. At the same time, most of the big crude buyers in California are limiting their purchases to minimum requirements for fresh crude, having determined to utilize storage oil at every opportunity.

Since decreases in crude production of Oklahoma, Kansas, Arkansas, Eastern and Rocky Mountain states practically offset the gains reported by Texas, Gulf Coast, North Louisiana and California last week, the net change in United States production resulted in a gain of only 2300 barrels daily. Actual production for the week ending April 25 amounted to 2,424,300 barrels, compared with an indicated allowable for the United States of 2,218,000 barrels, or 206,300 barrels in excess of the latter figure. On the basis of indicated demand and normal withdrawals from storage, however, last week's actual output of the United States cannot be considered excessive. Economic production limits indicate a normal demand for 2,445,000 barrels daily, between now and October 1, or about 21,000 barrels a day more than was actually produced last week. The only thing wrong with the production picture is the fact that East Texas continues to prevent an equitable division of the improved demand for crude.

East Texas Is Beginning to Affect California's Market

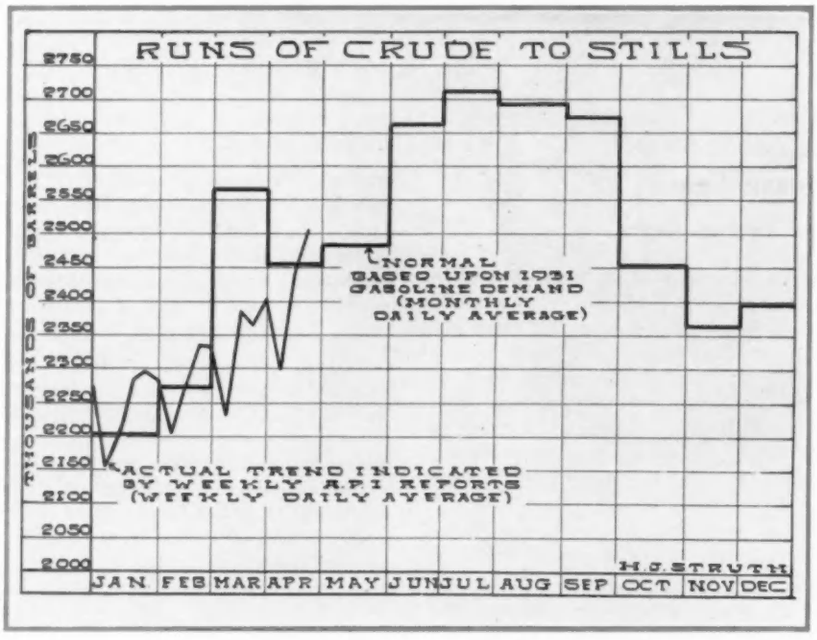
East Texas is beginning to affect California, due to the movement and proposed movement of products from this new district to markets which have been partially supplied by the former state. The extensive pipe line system under way threatens to allow East Texas products to be shipped more extensively by water, these movements to reduce California exports to some extent.

Rumors that East Texas crude and gasoline are being sent to California are erroneous. With light oil selling for 35 cents in the Los Angeles basin, dumping of outside oil seems out of the question. Crude price increases may be warranted in California, but such a rise might be a direct invitation to invade the district with Eastern products.

Plans are being laid to reduce the state output to 460,000 barrels, and an even lower allowable is possible. Small operators are reluctant to reduce production further, but a

*A new allowable of 160,000 barrels is expected to be ordered by the Texas Railroad Commission, Wednesday, April 29.

MARKET SECTION



limited market may force a lower output. An economic adjustment is under way and sentiment was lower during the week than ever before.

Gasoline prices have been softer, with well known brands selling for 8½ cents in the Los Angeles district. The regular posted retail price remains at 10½ cents, but orders to meet competition have been issued by the two largest marketers. Wholesale gasoline is moving at prices fractionally below those of last week. Movements to the Atlantic seaboard are bringing the lowest prices in years.

Oil Producers' Sales Agency is working to get additional members among the independent producers, the purpose of the organization being to find the best possible market outlet for crude oil.

Heavy oil and fuel oil prices remain firm, despite increased weakness in other phases of the market.

Gasoline Stocks Show Slight Gain

Reports received by The American Petroleum Institute for the week ending April 25 show that gasoline stocks at refineries were increased to the extent of 67,000 barrels, compared with a decrease during the preceding week of

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending April 18, 1931

(Figures in barrels of 42 gallons)

District—	Potential Capacity (Daily) Total	Reporting	Per Cent	Crude Runs to Stills Total	Daily Average	Per Cent Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	612,700	612,700	100.0	3,184,000	454,900	74.2	8,793,000	7,733,000
Appalachian	141,300	132,500	93.8	575,000	82,100	62.0	1,861,000	1,216,000
Indiana, Illinois, Kentucky	390,800	381,000	97.5	2,358,000	336,900	88.4	6,128,000	3,310,000
Oklahoma, Kansas, Missouri	461,100	412,200	89.4	1,932,000	276,000	67.0	3,601,000	3,823,000
Texas	809,000	743,500	91.9	4,303,000	614,700	82.7	7,933,000	8,839,000
Louisiana-Arkansas	266,600	262,000	98.3	981,000	140,100	53.5	2,118,000	2,332,000
Rocky Mountain	150,100	139,700	93.1	409,000	58,400	41.8	1,986,000	810,000
California	898,500	887,600	98.8	3,297,000	471,000	53.1	*13,964,000	98,772,000
Total week April 18	3,730,100	3,571,200	95.7	17,039,000	2,434,100	68.2	46,384,000	126,835,000
Total week April 11	3,730,100	3,571,200	95.7	16,598,000	2,371,200	66.4	46,757,000	126,838,000
Total April 19, 1930	3,678,900	3,515,400	95.6	17,866,000	2,552,300	72.6	**53,734,000	**135,837,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are Included Above in the totals of their respective districts.								
Texas Gulf Coast	529,500	529,500	100.0	3,318,000	474,000	89.5	6,824,000	6,482,000
Louisiana Gulf Coast	147,500	147,500	100.0	617,000	88,100	59.7	1,949,000	1,304,000

NOTE: In all the refinery districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

**Revised due to change in California.

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Second Quarter 1931	Economic Limit Second Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess Since† January 1
Arkansas	58,600	56,000	46,800	—9,200	48,867	—5,133
California	591,500	500,000*	528,100	28,100	529,824	29,824
Kansas	118,300	114,000	109,750	—4,250	110,175	675
Louisiana	78,900	71,000	67,000	—4,000	68,334	—2,666
Oklahoma	551,000	505,000*	545,300	40,300	498,204	13,204
Texas	798,700	732,000*	922,500	190,500	733,650	69,650
Balance of U. S.	254,000	240,000	204,850	—35,150	206,841	—25,659
Total	2,451,000	2,218,000	2,424,300	206,300	2,195,895	79,895

*Allowable.
†Excess based upon average allowable to date.

373,000 barrels. Since there was practically no change in quantity of crude run through stills at refineries during the week, it is apparent that the demand for gasoline continues to be fairly good. Still runs for the week ending April 25 averaged about 2,507,000 barrels, or at the same rate reported for the preceding week. Considering the fact that there was an increase in still runs during the week ending April 18 of 65,000 barrels daily, accompanied by a substantial decline in gasoline stocks, the result for the two weeks makes a materially improved showing.

Projection of indicated gasoline demand data for April shows that the total domestic and foreign consumption will approximate 38,837,000 barrels. This figuration is based upon still runs data to date which shows that refinery throughput for April will have amounted to about 73,923,000 barrels, representing about 32,156,505 barrels of gasoline. Since imports and natural gasoline will amount to about 5,680,000 barrels and stocks indicate a total withdrawal of about a million barrels, pointing to a probable consumption of 38,837,000 barrels. The forecast of probable gasoline demand, as compared by THE OIL WEEKLY, shows the expected demand for April to be 38,282,000 barrels. It is seen from this look ahead that actual consumption is apparently running above expectancy.

Cracked Gasoline Production

Week Ending April 18, 1931

(Barrels of 42 gallons)

District	Potential Charging Capacity Total	Reporting	Per Cent	Production Total	Daily Average
East Coast	246,900	222,900	90.3	606,000	86,600
Appalachian	45,900	43,400	94.6	129,000	18,400
Ind., Ill., Ky.	294,200	280,200	95.2	593,000	84,700
Okla., Kans., Mo.	219,900	192,300	87.4	355,000	50,700
Texas	395,500	379,400	95.9	848,000	121,100
Louisiana-Arkansas	109,400	106,900	97.7	253,000	36,100
Rocky Mountain	95,100	95,100	100.0	132,000	18,900
California	182,700	182,700	100.0	354,000	50,600
Total week Apr. 18	1,589,600	1,502,900	94.5	3,270,000	467,100
Total week Apr. 11	1,589,600	1,508,500	94.9	3,179,000	454,200
Total April 19, 1930		Not Available			

The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.

Texas Gulf Coast	305,000	300,500	98.5	696,000	99,400
Louisiana G. Coast	77,000	77,000	100.0	180,000	25,700

California Oil Receipts

(Barrels of 42 gallons)

	Week Ended April 18	Week Ended April 11
AT ATLANTIC COAST PORTS—		
Baltimore	73,000	.....
Boston	.....	.....
New York	51,000	.....
Philadelphia	.....	192,000
Others	72,000	.....
Total	196,000	192,000
Daily Average	28,000	27,429
AT GULF COAST PORTS—		
Total	.....	.....
Daily Average	.....	.....
AT ATLANTIC AND GULF COAST PORTS—		
Total	196,000	192,000
Daily Average	28,000	27,429
Daily Average Four Weeks Ended	50,071	50,929
Distribution of Total California Oil Receipts Is As Follows:		
Gasoline	196,000	192,000

Imports of Petroleum

(Barrels of 42 gallons)

	Week Ended April 18	Week Ended April 11
AT ATLANTIC COAST PORTS—		
Baltimore	295,000	245,000
Boston	.....	131,000
New York	768,000	541,000
Philadelphia	75,000	243,000
Others	332,000	"A" 217,000
Total	1,470,000	1,377,000
Daily Average	210,000	196,714
AT GULF COAST PORTS—		
Galveston District	.....	.....
New Orleans and Baton Rouge	52,000	.....
Port Arthur and Sabine District	.....	.....
Tampa	.....	.....
Total	52,000	.....
Daily Average	7,429	.....
AT ALL UNITED STATES PORTS—		
Total	1,522,000	1,377,000
Daily Average	217,429	196,714
Daily Average Four Weeks Ended	232,786	250,357
Distribution of Total Imports Is As Follows:		
Crude	974,000	712,000
Gasoline	256,000	341,000
Fuel Oil	292,000	"A" 324,000
Total	1,522,000	1,377,000

"A"—Revised.

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
April	657,050	122,200	640,950	206,800	42,100	57,800	138,700	75,950	625,700	2,576,250	77,018,100
May	663,300	131,000	662,350	203,900	39,900	53,800	137,150	82,500	623,700	2,597,700	80,529,600
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April 4	511,550	108,950	632,800	180,450	39,250	47,200	109,500	97,300	525,100	2,252,100	15,764,700
April 11	513,700	109,500	683,750	181,300	38,750	47,150	111,500	93,700	528,900	2,308,250	16,157,750
April 18	585,100	110,050	719,200	185,650	39,050	46,950	113,600	95,500	526,900	2,422,000	16,954,000
April 25	545,300	109,750	759,600	190,750	39,150	46,800	110,300	94,550	528,100	2,424,300	16,970,100
Increase	.....	.....	40,400	5,100	100	.....	.....	.....	1,200	2,300	16,100
Decrease	39,800	300	.....	.....	...	150	3,300	950	....	....	.....

Last Week's Daily Average Production by Districts

TEXAS	April 25	April 18
Panhandle District	57,300	55,300
North Texas	57,250	57,350
West Central Texas	25,150	25,050
West Texas	208,600	218,200
East Central Texas	49,700	51,650
East Texas	298,400	248,400
Southwest Texas	63,200	63,250
Texas Gulf Coast	162,900	158,200
Total Texas	922,500	877,400
OKLAHOMA	545,300	585,100
CALIFORNIA	528,100	526,900
KANSAS	109,750	110,050

LOUISIANA	April 25	April 18
North Louisiana	39,150	39,050
Louisiana Gulf Coast	27,850	27,450
Total Louisiana	67,000	66,500
ARKANSAS	46,800	46,950
MOUNTAIN STATES		
Wyoming	43,300	43,650
Montana	8,650	8,650
Colorado	4,050	4,200
New Mexico	38,550	39,000
Total Mountain States	94,550	95,500
EASTERN STATES	110,300	113,600
TOTAL UNITED STATES	2,424,300	2,422,000

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	3	..	..	..	1	..	2	..	.....	.....
California	7	4	6	4	..	..	1	..	3,585	3,250
Indiana	3	6	1	3	..	..	2	3	10	65
Kansas	9	8	4	3	4	3	1	2	1,375	3,050
Kentucky	3	2	2	1	..	1	1	..	10	25
Louisiana	9	5	5	1	1	..	3	4	3,607	300
Michigan	3	..	..	..	3	..	..	..	.....	.....
Mississippi	1	1	..	..	1	..	..	1	.....	.....
New Mexico	1	..	..	..	..	..	1	..	.....	.....
New York	1	4	..	1	1	3	..	..	.....	3
Ohio	9	22	3	6	4	11	2	5	6	35
Oklahoma	23	27	12	11	3	6	8	10	32,705	93,185
Pennsylvania	11	27	6	11	2	7	3	9	22	34
Texas	128	106	89	70	7	6	32	30	425,297	468,745
West Virginia	11	18	1	..	8	17	2	1	2	.....
Total	222	230	129	111	35	54	58	65	466,619	568,692
Increase this week	..	..	18	..	..	..	..	..	.....	.....
Decrease this week	8	..	..	..	19	..	7	..	102,073	.....

Comparison of Permits Granted for New Wells

State—	Week Ending April 25	Previous week	This week 1930	Total this month	This month 1930	Total this year	Total this date last year	1930 year total
Arkansas	..	1	3	1	8	17	37	108
California	5	4	17	26	57	125	241	922
Louisiana	6	4	31	16	90	112	353	948
Kansas	7	14	21	30	92	158	320	944
Oklahoma	22	20	63	86	304	387	987	2,830
Texas	157	109	98	536	526	1,096	2,486	7,052
Total	197	152	233	695	1,077	2,495	4,424	12,804

MARKET SECTION

Gasoline Demand Reflected In Oklahoma Crude Takings

This business of looking for some faint ray of hope in the crude oil market has some measure of reward this week. The fact that several buyers of Oklahoma crude oil, particularly buyers at Oklahoma City, are disposed to increase purchases over the remainder of April and throughout June is the cause of much asking of questions.

These buyers went before the Oklahoma Corporation Commission and raised figures as to requirements for the six weeks and this testimony resulted in the allowable output of the Oklahoma City field being raised to 165,000 barrels daily for April and 175,000 daily for May.

The oil producers have been asking many questions concerning this and out of their answers to their own questions they are disposed to find the faint ray of hope.

The season demands slightly increased gasoline output.

But the producer is asking why this necessary crude oil for more gasoline is not being taken out of storage. Also he wonders why the major organizations do not supply any seasonal gasoline requirements by purchasing gasoline on the open market, where it can be had at prices only twice that of crude oil.

Very likely the increased runs from some Oklahoma fields means nothing of consequence, so far as the immediate future of the crude oil producer is concerned, other than the acceptance of a little more crude oil. But it is impossible to have a set of questions of the above nature without the crude oil producer striving to find in them some evidence that his days of economic drought are nearing an end.

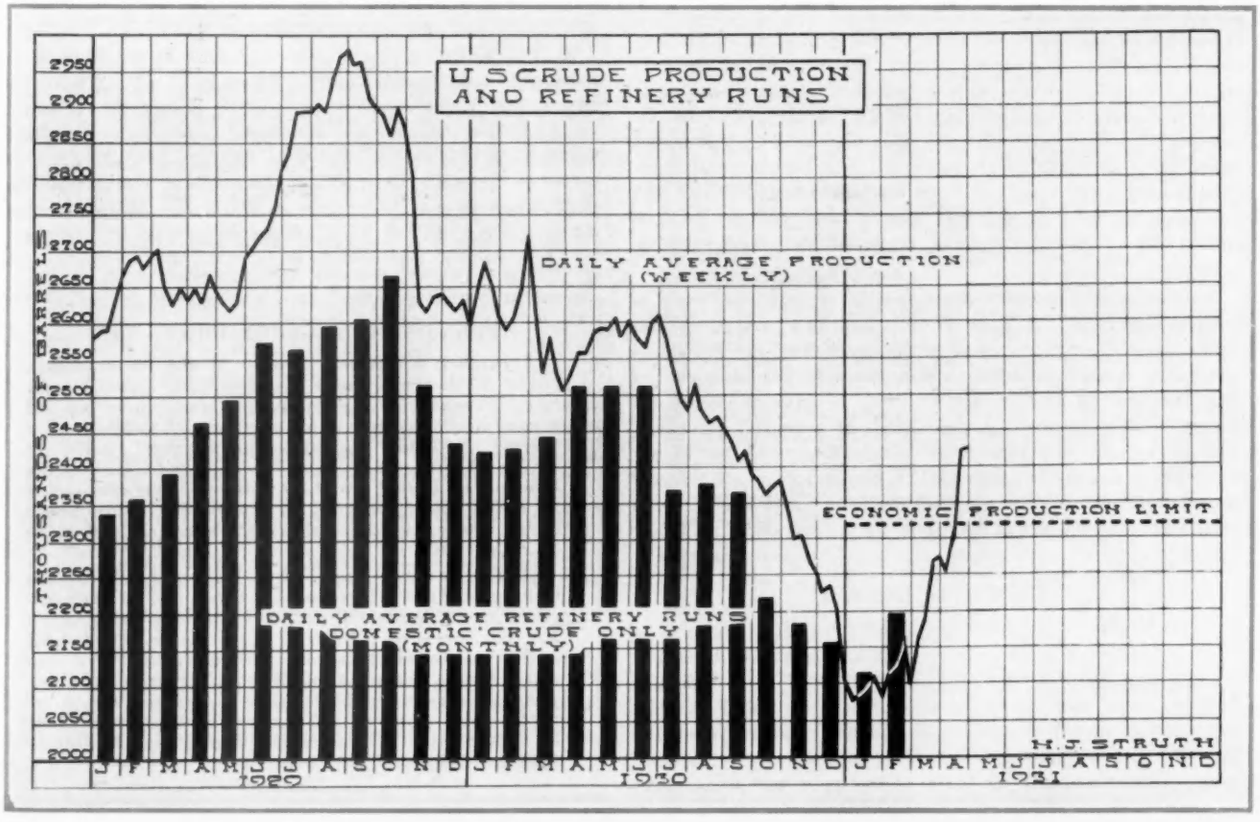
After raising the allowable output for Oklahoma City last week the Oklahoma Corporation Commission later granted the request for some further relief for owners of the settled production. Wells with output of less than 20 barrels per day were removed from restrictions of proration. Previously wells with 10 barrels or fewer per day were exempt. Now wells with output of more than 20 barrels per day are subject to restriction of 50 per cent of all oil in excess of 20 barrels.

Shipments from the Oklahoma City field last week were in excess of output, although the field now has its allowed figure of 165,000 barrels daily. Despite this permission the output of the field was only 150,285 barrels daily for the week ending last Saturday. All deliveries from the field ran 20,000 barrels daily in excess of actual output.

Potentials are to be taken May 1 and 2 for the Changer pool, South Earlsboro, Wewoka townsite, West Asher-Wanette, Konawa and West Seminole.

Although no actual instances are being cited, there are some complaints of producers selling oil in Oklahoma under posted prices. The amount of this is considered just sufficient to carry a constant threat of a reduction in the posted price.

The only price cut for Oklahoma last week was in the extreme southern part of the state, where American Refining Properties of Wichita Falls adjusted its schedule there to meet the posted schedule in the Wichita Falls area, where the concern buys the greater part of its crude oil requirements.



MARKET SECTION

East Texas Contracts Call for More Than 10,000,000 Barrels

Tyler, Texas.—Numerous contracts involving the delivery of an aggregate of more than 10,000,000 barrels of East Texas crude when available at a wide range of prices to refineries throughout the Southwest, Middlewest, Gulf and Atlantic Coastal points as well as Canada and European manufacturing centers will complicate proration enforcement. Few large crude contracts, if any, have been made on equal terms, and proration leaders are confronted with a herculean task in trying to make adjustments so that the owners of the seven separate trunk line systems completed and building into the district and the operators of 40-odd tank car racks may share proportionately in the allowable production of the district.

With a private field gathering system, East Texas oil can be delivered to the Texas coast via trunk line at 22½ cents per barrel, or 32½ cents per barrel with gathering charges included.

The posted gathering price in East Texas is 10 cents per barrel, but at least three gathering systems are reported to be willing to gather crude at five cents per barrel.

Purchasers and shippers of crude from East Texas will exert more unfavorable influence against proration than the rank and file of producers, as the independent members of the former group must obtain crude supplies at attractive prices in order to compete in the open market, and also handle a reasonable volume of oil daily to earn a return on investments in physical properties. Producers having crude committments see an opportunity to better their position through Magnolia Petroleum Company, Humble Oil & Refining Company and Gulf Pipe Line Company having posted a gravity scale price, amounting to 67 cents per barrel for 40 gravity and above. This trio of companies has likewise announced intentions of making outside purchases of oil on such a schedule should proration be put into effect throughout the district May 1. Producers that are fortunate enough to obtain well connections at the above price scale will be receiving about double the average price now obtainable for day-to-day runs and spot sales of oil. The actual relief to be available to producers through purchases at Mid-Continent gravity scale prices by the above major units will not be great, as each one will have a large amount of controlled oil to take care of as result of aggressive drilling programs.

An idea as to the trend of prices and conditions set forth in existing contracts for East Texas crude is conveyed by the following review of a portion of the deals that have been consummated in recent months. A complete report on all contracts that are now in effect is not available because of parties involved being reluctant to reveal details of sales and purchases. The price trend has been noticeably downward as the supply of crude in the district advanced to higher levels, and congestion on rail movement of oil from the Joiner and Kilgore fields within the past six weeks depressed the oil market to a greater extent.

The Largest Contract

An aggregate of 3,000,000 barrels of Joiner field crude to be delivered within a period of three years, if available, by W. B. Hamilton, Consolidated Oil Company, Trico Oil Company, Jenkins Bros. and Saner to the Crown Central Petroleum Corporation stands as one of the largest contracts involving East Texas crude now in effect. This contract involves a minimum price of 45 cents per barrel at the wells, and a maximum of $1.22½. The parties to this contract assumed that the posted price for the field was 57½ cents per barrel when terms were agreed upon about February 18, 1931, and sales are to be made at 12½ cents per barrel below the average postings of any two major companies, with upward and downward price fluctuations restricted by the minimum and maximum provisions. To illustrate the working of this contract, the posting of a $1.00 per barrel price by major companies would result in the above producers receiving 87½ cents, or 12½ cents per barrel less than the posted.

In order to fulfill the terms of the above contract, the purchasing company organized Crown Pipe Line Corporation, which has built a six-inch line from Hamilton et al's Jobe 109-acre and Camp 30-acre leases to a 30-car capacity rack on I. & G. N. Ry. at Poindexter to ship direct to the purchaser's plant and tanker terminals near Houston. Deliveries were scheduled to begin March 14 at rate of 4000 barrels daily, with buyer having option on an extra 1000 barrels daily, during first six months. During next six months deliveries are to be at rate of 3000 barrels, with extra 2000 barrels daily optional on the part of the buyer. During second year deliveries can go forward at maximum of 2000 barrels daily, and at maximum of 1000 barrels daily in the third. All deliveries are contingent upon the oil being available from said properties.

Haynes Drilling Company, Inc., Shreveport, began deliveries middle February, 1931, on a 200,000-barrel committment from its property in the Joiner field to Sinclair Refining Company at a flat price of 45 cents per barrel, with the producer paying five cents to Inland Waterways Pipe Line Company for gathering and loading the oil aboard cars, or a net price of 40 cents per barrel at the wells. Recent termination of this contract by Sinclair Refining Company along with other connections held by the latter in the Joiner field has resulted in Haynes Brothers et al taking preliminary steps toward the construction of a private line and rack to protect their interests.

W. D. "Andy" Anderson-Roy Cameron et al, Fort Worth operators, made contract middle February to sell 1,000,000 barrels, if and when available, from their Joiner field leases to Joe E. Butler and John C. Calhoun of Corsicana, and John D. Wrather of Oklahoma City at a flat price of 40 cents per barrel at the well. Deliveries to be made at a maximum rate of 3000 barrels and a minimum of 2000 barrels daily. Producer reserved right to sell oil produced in excess of contract to

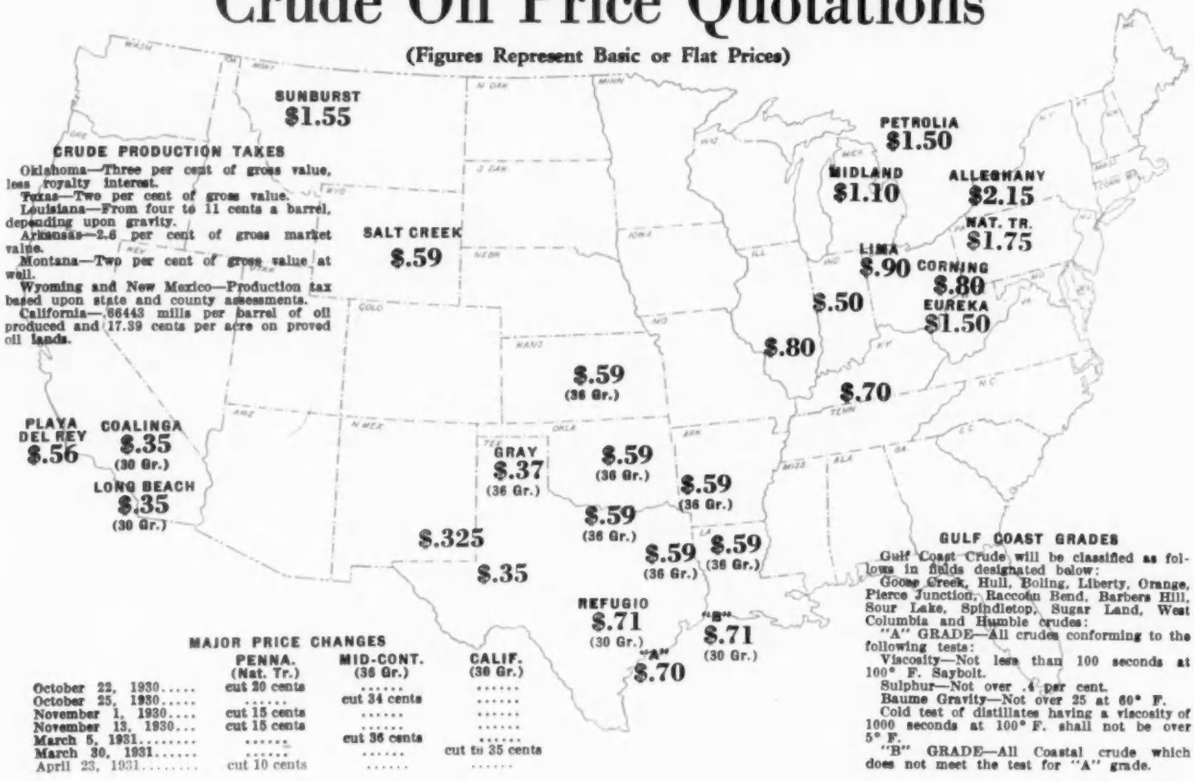
PENNSYLVANIA CRUDE PRICES CUT

A further downward revision in the Pennsylvania crude market was made on April 23, when Joseph Seep Purchasing Agency posted reductions on all grades of Pennsylvania oil of from 10 to 20 cents a barrel. National Transit crude is now quoted at $1.75 a barrel, a reduction of 10 cents; Eureka Pipe Line oil is quoted at $1.50 a barrel, a reduction of 20 cents. Effective April 28, Southwest Pennsylvania crude was reduced another 10 cents per barrel to $1.60.

Announcement made by Magnolia Petroleum Company, April 23, states that it has met prices posted by the Humble Oil and Refining Company, April 21, in North and Central West Texas, Panhandle and West Texas and also for Mirando, Salt Flat and Darst Creek. In addition, Magnolia Petroleum Company also reduced Luling and Corsicana heavy oil to 38 cents a barrel. No further changes were made by this company in prices of Oklahoma, Kansas or East and Central East Texas.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.
Texas—Two per cent of gross value.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 per cent of gross market value.
Montana—Two per cent of gross value at well.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (30 Gr.)
October 22, 1930.....	cut 20 cents	.....	.....
October 25, 1930.....	.....	cut 34 cents	.....
November 1, 1930....	cut 15 cents	.....	.....
November 13, 1930...	cut 15 cents	.....	.....
March 5, 1931.....	.....	cut 36 cents	.....
March 30, 1931.....	.....	.....	cut to 35 cents
April 23, 1931.....	cut 10 cents	.....	.....

GULF COAST GRADES

Gulf Coast Crude will be classified as follows in fields designated below:
Goose Creek, Hull, Boling, Liberty, Orange, Pierce Junction, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugar Land, West Columbia and Humble crudes:
"A" GRADE—All crudes conforming to the following tests:
Viscosity—Not less than 100 seconds at 100° F. Saybolt.
Sulphur—Not over .4 per cent.
Baume Gravity—Not over 25 at 60° F.
Cold test of distillates having a viscosity of 1000 seconds at 100° F. shall not be over 5° F.
"B" GRADE—All Coastal crude which does not meet the test for "A" grade.

Official Postings and Differentials

(Revised to April 28, 1931)

California: (Prices effective March 30).

In all **Los Angeles Basin** fields (except Playa del Rey) oil from 14 gravity to 20.9 gravity is 65 cents. Deduct 3 cents for each degree up the scale to 30.9, making this the lowest at 35 cents. Fields in this group include **Alamitos Heights, Long Beach, Seal Beach, Torrance, Athens, Rosecrans, Dominguez, Santa Fe Springs, Montebello, Huntington Beach, East Coyote, Richfield** and **Brea-Olinda.**

Playa Del Rey: 56 cents flat, 20-26 gr.

In the **San Joaquin Valley** fields, 11 to 11.9 gravity crude is 50 cents per barrel, 14 to 14.9 gravity, 55 cents. Differential of 2 cents off each degree up the scale makes 30 gravity and above 35 cents per barrel. Fields in this group include **Coalinga, McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills** and **Lost Hills.**

Santa Paula 14 to 19.9 gravity, 60 cents; 20 gravity, 58 cents; 21 gravity, 56 cents, and take off 3 cents for each degree up to and including 28 gravity. **Orcutt** 14 to 19.9 gravity, 55 cents, and take off 2 cents for each degree up to and including 29 gravity which is 35 cents.

Oklahoma-Kansas-North Texas: (Effective March 5, 1931). Below 29 gravity 43 cents with differential of 2 cents to 40 and above. Magnolia Petroleum Company posts 40 cents for below 26 gravity with differential of 1 cent to 29 gravity, 43 cents. From 29 to 40 and above, same schedule as foregoing. **North Texas** posting applies to oil produced in **Wichita, Wilbarger,** Archer, Northern Young, Van Zandt, Mexia, Powell, Boggy Creek, Richland, Wortham, Currie.

Ranger, North Texas, Moran and **Cook County oil:** Below 29 gravity, 33 cents with differential of 2 cents for each degree to 40 and above which is posted at 57 cents a barrel.

Texas Panhandle: (Effective April 21, 1931).

Gray County: Below 35 gravity, 33 cents with differential of 2 cents for each degree to 40 and above which is posted at 45 cents a barrel.

Carson-Hutchinson Counties: Below 35 gravity, 30 cents with differential of 2 cents for each degree to 40 and above which is posted at 42 cents a barrel.

East Texas: (Effective March 26). Same scale of prices as Oklahoma-Kansas-North Texas.

West Texas and New Mexico: (Effective April 21, 1931).

Winkler and **Pecos County, Texas:** Flat price of 35 cents a barrel.

Lea County, New Mexico: flat price of 32.5 cents a barrel.

Southwest Texas: (Effective April 21, 1931).

Refugio Heavy: Below 25 gravity 60 cents a barrel. **Refugio Light:** 25-25.9 gravity 61 cents with differential of 2 cents for each degree to 35 and above which is posted at 81 cents a barrel. **Mirando Crude:** 60 cents. **Salt Flat:** 53 cents. **Darst Creek:** 53 cents. **Pettus:** 75 cents. **Luling:** 38 cents; **Corsicana Heavy** 38 cents.

Gulf Coast: (Effective April 21, 1931).

Grade **"A":** 70 cents a barrel. Grade **"B":** Below 25 gravity 60 cents a barrel; 25-25.9, 61 cents with differential of 2 cents for each degree to 35 and above which is posted at 81 cents a barrel. **High Island,** 75 cents; **Jennings,** 80 cents; **Markham,** 50 cents.

North Louisiana and Arkansas.

Pine Island, Haynesville, Bull Bayou, El Dorado, Cotton Valley, Zwolle: Below 29, 43 cents with differential of 2 cents to 40 and above. Magnolia Petroleum Company posts 40 cents for below 26 gravity with 1 cent differential to 29 gravity, 43 cents. From 29 to 40 and above, same schedule as foregoing. **Stephens:** Below 29, 54 cents with differential of 4 cents to 32 and above. **Smackover,** 45 cents; **El Dorado east field** 70 cents; **Bellevue,** 45 cents.

North Louisiana and Arkansas. (Effective Mar. 10, 1931).

Salt Creek: 29-29.9 gravity 45 cents with differential of 2 cents to 37 and above. **Elk Basin** and **Grass Creek,** 90 cents; **Big Muddy,** 65 cents; **Lance Creek,** 98 cents; **Rock Creek** 66 cents; **Mule Creek,** $1.20; **Rex Lake,** $1.10; **Osage,** 50 cents; **Cat Creek,** $1.25; **Pondera,** $1.45; **Sunburst,** $1.55; **Hogback, N. M.,** $1.40.

Eastern States: (Effective April 28, 1931).

Bradford, Allegany district, $2.15; National Transit oil, $1.75; Southwest Pennsylvania oil, $1.60; Eureka P. L. (W. Va.) $1.50; Buckeye P. L. oil, $1.25; Corning crude, $1.15; Somerset in **Eureka Lines, 75 cents; Ragland,** 60 cents; **Oil City, Ky.,** 70 cents.

Michigan—Midland, $1.10; **Muskegon,** below 29 gravity, 65 cents with differential of 4 cents to 35 gravity; 31-31.9, 92 cents with 3 cent differential to 44 gravity and above.

Central States: (Effective March 5, 1931).

Wooster, 99 cents; **Lima,** 90 cents; **Waterloo,** $1.20; **Indiana,** 50 cents; **Princeton,** 80 cents; **Illinois,** 80 cents; **Western Kentucky,** 75 cents.

Canada: (Effective October 28, 1930).

Petrolia, $1.50; Oil Springs, $1.57.

other purchasers. Butler, Calhoun et al organized Independent Oil Supply Company to construct a pipe line gathering system and rack at Overton, and Wrather et al are at work on a refinery near the above rack. Deliveries on this contract are to commence May 1. In the meantime Anderson et al have sold 25,000 barrels of crude each to Root Refining Company, El Dorado, and Texas Pacific Coal & Oil Company to be delivered as produced at a flat price of 20 cents per barrel at the well.

Houston Oil Active

Houston Oil Company has figured prominently in the numerous spot crude sales made on Rusk County crude, and has probably delivered more oil to outside buyers than any single company. This company made contract in February, 1931, to supply refineries controlled by Vacuum Oil Company at East St. Louis and other Middlewestern points 180,000 barrels of oil at 50 cents per barrel loaded aboard cars, and early in March sold 100,000 barrels to Atlantic Refining Company, with tanker loadings taking place at the latter's terminal at Atreco, Texas. Houston Oil Company is also reported to have sold through Cooper Petroleum Company, 100,000 barrels at 50 cents per barrel f.o.b. cars to the Atlantic Coast plants of the Cities Service Oil Company.

Ball Oil Corporation et al are credited with having made contract late in February, 1931, for the delivery of 100,000 barrels of crude from Joiner field leases to Petroleum Marketing Corporation at a flat price of 45 cents per barrel at the wells. The latter is reported to have made contract several weeks ago to run 2000 barrels of crude daily from Ben Johnson et al's lease in the Joiner field for 30 days in return for a cash advance of $10,000, thus netting the producer 16 2/3 cents per barrel.

Wainwright-West Oils, Ltd., of Toronto, Canada, and associates made contract early last February to sell 100,000 barrels of oil, as produced, from their 7½-acre producing lease on the Camp-Cook land, Joiner field, to Sabine Pipe Line Company (L. H. Gray interests) at a flat price of 45 cents per barrel, with gathering and loading taking place via the Inland Waterways Pipe Line Company's system. The purchaser is reported to have sold the oil to be delivered to the Canadian refinery of British-American Oil Company. Sabine Pipe Line Company has a number of additional contracts in effect in the Joiner and Kilgore fields, and made contract early in April to deliver 50,000 barrels of crude to the El Dorado, Arkansas, refinery of Root Refining Company at a flat price of 30 cents per barrel loaded aboard cars.

Primrose Petroleum Company, Dallas, contracted early in March, 1931, to purchase 1500 barrels of oil daily for 90-day periods from Beacon Oil & Refining Company, which has a gathering system in the Joiner field, with a plant and rack located southeast of the field and northwest of Henderson. Panola Pipe Line Corporation sold 100,000 barrels of Joiner crude to Sun Oil Company early in April for a flat price of 35 cents per barrel loaded in cars. This oil is moving to the buyer's tanker terminal at Sun station, near Beaumont. Tyler Pipe Line Company is reported to have contracted to run for purchase about 50,000 barrels of crude from Robert Oil Corporation et al's properties in the Joiner field at a flat price of 18 cents per barrel, with deliveries starting April 18.

Gulf Coast Pipe Line Company (Moody-Seagraves) is reported to have a contract with Atlantic Refining Company for 500 barrels per day at 35 cents at the well. This contract, however, provides that it may be terminated on the advent of proration.

Central Pipe Line's Contracts

Central Pipe Line Company, Fort Worth, has made a number of small contracts with operators in the Joiner field to assure a full load for its six-inch gathering system, which terminates at Overton, where Arrow Refining Company, an affiliated concern, is erecting a 2500-barrel refinery. The former contracted middle February, 1931, to purchase a maximum of 600 barrels oil daily beginning March 25 to January 1, 1932, from Neal Cooper's 15-acre lease of Merrick Drilling Company and Texas Inland Oil & Gas Company at a flat price of 40 cents per barrel during first six months after start of deliveries. During the remainder of the life of the contract, the crude price will remain at 40 cents per barrel, unless any two major companies buy oil in the field at an officially posted price, then the producer will be paid 50 per cent of the difference that prevails between the average major company price and the 40-cent level. This splitting of the difference applies whether major companies post above or below 40 cents per barrel. Central Pipe Line Company straps tanks at 98 per cent and b.s. and water allowances not to exceed one-half of one per cent.

Stanolind Crude Oil Purchasing Company, buying subsidiary for Standard Oil Company (Indiana), has figured prominently lately in the purchase of spot oil from all sections of East Texas, paying a price range of 20 to 30 cents per barrel at the well. This concern has made no effort to book long period contracts, but has been partial to 50,000-barrel quantities, more or less. When proration was put into effect April 23 this company was shipping oil from seven separate racks, as Stanolind Oil & Gas Company has not completed its recently authorized rack in the Kilgore field. Including the production of the latter concern, Stanolind Crude Oil Purchasing Company has lately been taking between 30,000 and 40,000 barrels of oil daily from the district by tank cars. The bulk of this oil has been consigned to the Destrehan, Louisiana, plant of Mexican Petroleum Corporation, an affiliated concern that has curbed South American imports in response to the plea of independent oil men. Oil movement originating on the Texas & Pacific Railroad has been dispatched direct to Destrehan by cars at a rate of 11 cents per 100 pounds, but loadings of the I. & G. N. Railroad were consigned to Baytown, Texas, where cargoes were loaded into barges for water movement to Destrehan, as a much higher rate applies on the latter because of the two line rail haul.

Foreign Orders Booked

Independent Pipe Line Company is credited with having booked a large export order involving delivery of East Texas crude on consignment to Boring, Hardy and Company of London, England, and also has made a hook-up to supply the Chalmette, Louisiana, refinery of Chalmette Petroleum Corporation. Tom E. Cranfill, Dallas, head of the Independent Petroleum Association of Texas, is president of Independent Pipe Line Company, which has a 50-car rack on the Texas & Pacific Railroad at Willow Springs.

Negotiations were pending early this week between officials of Sabine Pipe Line Company and Southern Oil Refining Company, an affiliated concern, for the sale of a large amount of East Texas crude to a European buyer. Producers were being interviewed in regard to prices and possible deliveries, while initial steps have been taken toward the movement of oil on a common carrier basis by pipe line direct from the wells to the Gulf Coast. However, agents of the interested foreign purchaser have not made definite contracts, according to reports.

Yount-Lee Oil Company, Beaumont, is known to have lined up definite market outlets for a substantial volume of East Texas crude daily over a long period in connection with the company's two major lease purchases made within the past two months in Gregg County. This concern has a huge tank farm in connection with its tanker terminals near Beaumont, and will utilize this equipment in making deliveries. Unless the company later participates in a new pipe line project to the Gulf Coast, in all probabilities its East Texas oil will be moved on a common carrier basis by other trunk line owners.

(Continued on page 71)

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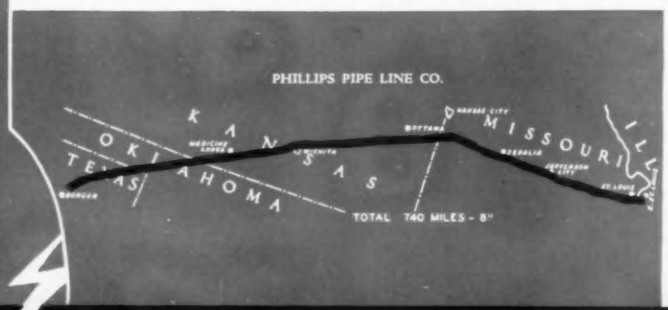

YOU, TOO, CAN DEPEND UPON IT

At Borger, Texas, the eight inch line of the Phillips Pipe Line Company starts on its journey. It reaches out of Texas, through Oklahoma, Kansas and into Missouri. Near Jefferson City it reaches the bank of the Osage River. Lengths are coupled up, river clamps applied, a tug and barge come into service and before long 900 feet of pipe lies buried in the mud of the river bottom, and the line goes on to St. Louis.

For this out of the ordinary service—an out of the ordinary pipe was used—Republic Electric Weld. Long lengths meant fewer submerged joints. High tensile strength and ductility meant greater ease of handling. Sound structure and uniform thickness meant less danger of damage during progress of the crossing.

The experiences of users of Republic Electric Weld Pipe will guide you to a wise selection of pipe—one upon which you can depend without reservation.

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Administration to Keep Within Statutes in Oil Industry Aid

(*Continued from page 25*)

The eagerness of Secretary of Commerce Lamont and of Secretary of the Interior Wilbur to assist the oil industry in face of the limitations it was believed would have to be laid down upon government commitments through the counsel of the attorney general, who is the chief law officer of the government, led to thought that perhaps there was some little friction between the first two named and the latter.

It was considered also that the attorney general in his recent speech in Minneapolis forcefully gave expression to the limitations that would be imposed upon the government's activity with respect to the oil situation, seemingly to set at rest any beliefs that might exist that others of the cabinet might be moved "to wink at law violations in times of stress."

The administration, it is said, has been somewhat disturbed over the oil situation, particularly in view of predictions made by some economists of lower prices for crude before higher prices prevail. Efforts have been made in the past to secure legislation that would lift natural resource industries from application of the antitrust laws as a measure of conservation, but congress has ignored the recommendations of the president in this regard.

It has been made clear here that any activities on the part of the petroleum industry that heads up to price fixing, or agreements that contemplate conserving production for the purpose of enhancing the price of oil, in the absence of confirmation thereof by congress, cannot escape the attention of the department of justice.

Interstate Commerce Ruling Hits Tank Cars of Small Capacities

Fort Worth, Texas.—Placing of a freight penalty on movement of crude oil from the principal loading points in East Texas by tank cars to certain points in the middle west when less than 10,000 gallons capacity cars are used, sets a precedent on such matters and forces small tank cars into discard. Shippers of crude in tank car lots from 27 designated points on the Texas & Pacific, I. & G.-N. and St. L. S. W. of Texas railroads to middle western points must pay freight on basis of a 74,000-pound load, or the crude capacity of a 10,000-gallon car, when a car of less capacity is used. Other than the inconvenience of replacing smaller cars with 10,000-gallon capacity, or larger, the penalties carried by this new tariff ruling authorized by the Interstate Commerce Commission can be sidestepped by East Texas shippers, but there is danger of the ruling being applied to other rail hauls, and also to all other pretroleum products.

Effective April 24 the above railroads cut their tariff on crude movement in tank car lots from East Texas racks to Omaha, Roxana and Wood River, Illinois, 3½ cents per 100 pounds, making the rate 25 cents per 100 pounds to Omaha, and 20 cents per 100 pounds to the other two points, but at the same time the minimum weight rule was invoked. Protests were immediately made by Gulf Refining Company, The Texas Company, Shell Petroleum Corporation and Standard Oil Company (Indiana) against the minimum weight clause, but a hearing was denied. These companies acted because of danger of the plan spreading to other lines and to other hauls.

Shifting of 8000-gallon capacity cars from East Texas crude service to the middle west began immediately, as shippers using the small cars will pay about $37.00 per car freight penalty in moving oil to Omaha, while use of less than 10,000-gallon cars to Roxana and Wood River carries a penalty of about $29.60. The railroads probably have in mind a shorter train, as four large cars can accommodate a combined load that is equivalent to five 8000-gallon cars. Then the railroads further economize in combining the load because of the 1½ cents per mile allowed car owners for use of the cars.

Rumors of Sabotage Against Oil Properties Cause Little Alarm

Fort Worth, Texas.—Widespread publicity given late last week by newspapers in regard to reported intentions of a radical element to destroy by nytroglycerin and fire the pipe lines, refineries and other physical properties of oil companies in Texas and Oklahoma did not alarm the officials of the companies as the stories would indicate. Rumors of pending acts of sabotage against oil properties received their start when Captain Frank Hamer, Austin, of the Texas Rangers, wrote all the larger operators and companies with holdings in Texas that the recent wholesale thefts of nitroglycerin from storehouses in Oklahoma and Texas in his opinion was for the purpose of committing sabotage. Captain Hamer added that he had first-hand information that a group of radicals planned to commit such acts, and that the word was being passed along to the oil companies in confidential form as part of his duty as a peace officer.

One of the letters sent out by Captain Hamer to an Oklahoma concern was turned over to an Oklahoma peace officer, who in turn proceeded to broadcast the warning under the Ranger captain's signature, with newspaper publicity following immediately. Release of the original story to press wire services soon resulted in a magnified report because of newspapers in each oil and refining center tacking on a local slant which in turn went out over the wire services. This publicity was condemned by Captain Hamer, and he refused to elaborate on the information he held in regard to activities of the radical element.

Except for labor disturbances caused by agitators in recent months on a few of the major oil and gas line projects, extending from the Mid-Continent to middle western points, there has been no important labor troubles in southwestern oil circles within the past eight years. In January, 1923, large producing companies in Texas, Oklahoma, Louisiana and Arkansas discovered that the Industrial Workers of the World had succeeded in building up a large membership among field laborers and refinery operators for the Oil Workers' Industrial Union No. 230. Meetings were then being held in the field camps of major oil companies at nights without the latters' knowledge. Full details on the activities of these organizers, including excerpts from the literature and motto then being distributed by organizers of the I. W. W. was carried in the January 13, 1923, issue of THE OIL WEEKLY. This threatened labor disturbance was

terminated promptly by the various companies temporarily doing away with the jobs held within their organizations by holders of the "red card."

Due to the abnormal small volume of work taking place in all fields in the Southwest, except in East Texas, the oil operators and companies have thinned the ranks of their workmen to old and loyal men, and little opportunity exists for agitators to cause trouble. However, East Texas offers a contrast in that the boom is still on and field forces include many floaters that may be influenced by agitators. Recent collapse of the crude price structure in East Texas has caused large and small companies to carry their retrenchment programs to their field staff payrolls, with roustabouts and common laborers being paid from $2.50 to $4.00 per day. Considering that living costs are extremely high in the district because of the boom there are many laborers working regularly that barely earn sufficient to provide shelter and food for their families, but adjustments on this situation are now being made by some of the companies.

Other States Accepting Texas Invitation to Oil Conference

Austin, Texas.—Representative Howsley, secretary of the senatorial committee which is to meet with governors and other representatives of the oil producing states in Austin, May 4, announced April 27 that responses to invitations issued had been received from the following persons: The governor of Oklahoma will send a personal representative; W. C. Lewis, assistant attorney general of Oklahoma will probably represent that department; P. A. Walker, chairman of the Oklahoma Corporation Commission, may be present; Governor A. M. Clark of Wyoming is sending the commissioner of public lands as his personal representative; the state geologist of Wyoming will attend; the California legislature probably will sent representation; the attorney general of Louisiana will attend; and the speaker of the house of representatives of Arkansas as well as several members of that body, will attend.

International Derrick, Stacy Engineering Company Merged

Columbus, Ohio. — International Derrick & Equipment Company has been merged with The Stacey Engineering Company, Cincinnati. The latter company operates the P. H. and F. M. Roots Company and Connersville Blower Company, Connersville, Indiana. The merged company is to be known as International Stacey Corporation, with headquarters here, and Harry M. Runkle, formerly president of International Derrick & Equipment Company, will become president and general manager of the merged organization. Colonel Carmi A. Thompson, Cleveland, former president, will be chairman of the board of directors. Wayne B. Stacey, present vice-president of Stacey Engineering Company, will remain in charge of the Cincinnati property.

International Derrick & Equipment Company is one of the largest concerns in the country engaged in the manufacture of oil well equipment, towers and derricks, transmission, power line and railroad equipment, standard buildings, billboards and other standardized steel products. It owns and operates large plants in Columbus and Delaware, Ohio, Beaumont, Texas, and Los Angeles, and maintains 30 warehouses in this and foreign countries.

The Stacey Engineering Company is the owner and operator of Stacey Brothers Gas Construction Company and is largely interested in Stacey Manufacturing Company, both of Cincinnati; and in addition owns and operates the two aforementioned plants located at Connersville, Indiana.

Stockholders of both companies have approved the merger agreements and it is the intention immediately to consolidate the executive offices of the business in Columbus.

Beman G. Dawes, Fletcher S. Heath, Joseph H. Frantz, W. R. Pomerene and other business men of Columbus, will be actively identified with the new organization.

Texas Company Asks Hearing On Revision of Rail Tariffs

Washington, D. C.—The Texas Corporation has petitioned the Interstate Commerce Commission to reopen proceedings in its recently announced decision which revised the rates on petroleum and its products through the South and Southwest. The petition claims that the ruling prescribes a higher basis of rates from points of origin used by The Texas Corporation and others than it prescribed from points of origin used by their competitors in the South.

The petition further states that the company expects to show, if granted a further hearing, that the commission has singled out the South to impose upon it a rate level on petroleum products so far in excess of the highest levels prescribed in other sections of the country as to warrant criticisms made by dissenting commissioners that such levels were prescribed on a mistaken notion that they were designed to preserve carriers' revenues rather than warranted by the evidence submitted.

The petition finally points out that this decision is untimely in that it is based on information and data originally presented five years ago despite the fact that obvious and unmistakable changes have taken place in the petroleum industry.

Texas Commission Rejects Suggested Umpire Change

Austin, Texas.—Commissioner Pat Neff, Saturday, April 25, asked the Texas Railroad Commission to replace proration umpires with deputy oil and gas supervisors. The majority of the commission denied the request. Neff pointed out that the umpires were recommended and paid by the oil companies whereas the deputy oil and gas supervisors were paid by the commission. Since the work of the 18 supervisors duplicates in a large measure, the work of the umpires, and they are willing and able to render this additional service, they should replace the latter, Neff pointed out.

Investigation showed that the other members of the commission are in favor of payment of umpires by the state, but that the budget of the department limits the present force. The other commissioners are ready and willing to place their own men in charge of all regulations passed by the commission and will do so at any time sufficient funds are available to pay their salaries.

▼ ▼ THE WEEK'S NEWS ▼ ▼

Saxet Company Acquiring Gas Properties in Kansas

New York.—A special meeting of stockholders of Saxet Company has been called for May 1 to ratify acquisition of companies controlling 240 proven acres of natural gas holdings in the Hugoton field of Southwest Kansas and Western Oklahoma. The properties, valued by independent engineers at about $18,000,000 and considered as having gas reserve of 2,400,000,000 cubic feet, are to be acquired from Moody-Seagraves Company through purchase of all the common stock of Argus Production Company and Western Production Company and 87½ per cent of the common stock of Missouri Valley Gas Company.

Shell Union Chief Decries Third Grade, Cheap Gasoline

New York.—The Royal Dutch-Shell Group is in hearty sympathy with the efforts of the oil states advisory committee to stabilize conditions in the oil industry, and will do everything in its power to aid in the furtherance of the committee's program, according to F. Godber, one of the managing directors of the Dutch-Shell Group. He characterized as "very unwise" the steadily increased production in the face of large existing over-supply and feels strongly that it is sure to delay indefinitely the recovery of the industry. Mr. Godber thinks that meeting "bootleg" competition by the marketing of low quality gasoline is a mistake that will still further aggravate over-production.

"The Royal Dutch-Shell Companies have long advocated and practiced a policy of conservation," Mr. Godber said. "Shell Union Oil Corporation has complied without question with the allowable takings allotted its producing wells and has been active in its efforts to bring about the adoption of a sane and practical policy of conservation. In the same way the output of the properties of the Dutch-Shell Group in other countries has been sharply curtailed. As announced last month, Shell Union Oil Corporation, as a further contribution to the program of conservation in the United States, has arranged to reduce its imports by at least 50 per cent this year as compared with 1930.

"The efforts of the oil states advisory committee to provide a plan by which the industry can put itself on a sound, economic basis seem to offer an admirable way out of many present difficulties. Proration has been invaluable in limiting output and preventing waste, but proration should be made fully effective by an arrangement between the states. As the potential supply is increased by the development of new fields, the amounts allotted each state and each pool ought to be readjusted so that the total does not increase beyond that which can be absorbed by the demand. The plan the committee offers is sound and workable and should appeal to every constructive element of the industry. Considerable progress has been made and if proper support is given the movement, it can be pushed to a successful conclusion.

"Any factor which tends to increase production of petroleum products is sure to be detrimental. For this reason, the Shell Companies feel it unwise to attempt to meet 'bootleg' prices of gasoline by marketing a low quality product. The production and sale of low quality gasoline to compete with that offered by 'bootleggers' will result in increased output and consequently a further bad effect upon the market. Further, it should be remembered that the general distribution of a low quality product will entail very heavy additional capital investments in the way of pumps, tanks and other facilities, thus adding to the already enormous unproductive investment in such facilities. The oil industry can ill afford such an expenditure at this time."

Tulsa.—The work of drafting an interstate oil compact was begun in Oklahoma City Tuesday by a legal sub-committee of the Oil States Advisory Committee. Its work will be placed before the Oil States Advisory Committee in Austin, Texas, next week.

Northcutt Ely, executive assistant to Secretary of the Interior Wilbur, attended the Oklahoma City meeting as an observer.

Institute to Assist in Vapor Lock Elimination

New York City.—Relocation of fuel lines on motor vehicles to permit use of fuels assuring maximum power, easy starting and quick acceleration without loss of efficiency or engine stoppage through "vapor lock," will be sought by the board of directors of the American Petroleum Institute through cooperation with the board of directors of the National Automobile Chamber of Commerce and the Council of the Society of Automotive Engineers. In a resolution unanimously adopted by the Institute board, it was explained that motor fuel must vaporize at fairly low temperatures in order to provide easy starting and quick acceleration of the motor. If, however, the fuel in the pipe leading from fuel tank to carbureter is overheated, as by locating the pipe too close to the exhaust line, it may boil in the pipe and the vapor formed by the boiling process will halt the flow of the fuel, reducing power or stopping the engine.

Permanent Exposition Show Causes Widespread Interest

Los Angeles.—Another derrick is to be erected at the Permanent Oil Equipment and Engineering Exposition in Los Angeles. This will be an all steel type which incorporates a newly patented design. It will be built by Petroleum Derrick Company on the outside space east of the main building during the latter part of April so as to be ready for inspection as soon as possible.

Considerable interest in derrick design has been shown by foreign visitors who are giving considerable study to this subject. Both this new derrick and the Ideco derrick which was erected before the second annual exposition will present valuable data on derrick design and construction to the visitors throughout the year.

The appearance of the permanent exposition has been greatly changed since the second annual. Not only are there many more exhibits but nearly all of them are well decorated and a fuller line of equipment has been set up. These factors add greatly to the value of the exhibits. It is interesting to note that many visitors, although they may be specifically interested in a particular line of equipment, will spend considerable time in the examination of every type presented. This is equally true of men from other countries who make a thorough study of all tools and machinery that are shown.

Personal Mention—Men You Know

▼ ▼ ▼

E. L. Maulsby, superintendent of gas measurement for Oklahoma Natural Gas Corporation, Tulsa, was elected chairman of the Southwestern Gas Measurement Short Course for the 1932 session. His election came at the close of the 1931 course at Norman, Oklahoma, April 24. Mr. Maulsby was chairman of the program committee for the 1931 course.

W. Armstrong Price, Corpus Christi geologist, has been appointed an associate editor of the American Association of Petroleum Geologists for its publications. This organization has published 14 annual volumes of its bulletins and four special volumes to date, which places it in the class of probably the largest organization of its kind in the world.

The appointment is a real boost for this particular section of the country, as it is recognization of the tremendous amount of development now under way in the vicinity of Corpus Christi.

Preliminaries for the tennis tournament to be held by the members of the San Antonio section of the American Association of Petroleum Geologists will start May 1 and continue to May 15. Twenty entrants have signed up and many more are expected to take part. A silver cup has been designated for first place. The committee in charge of arrangements consists of: Joe M. Dawson, chairman; Dave Hedley, H. H. Henderson and I. A. Douglas.

Lewis B. I. Hamilton, J. P., M. I. P. T., chief geologists of The Magdalena Syndicate, sailed April 23 on the "Berengaria" en route to Germany, where he will take charge of the development of the German oil properties of the company.

Ralph E. Fair, prominent drilling contractor and independent operator of Paris and Bucharest, is visiting points of interest in Texas and elsewhere in the United States.

Engineer H. J. E. M. Hamer of the Campania Mexicana de Petroleo El Aguila, S. A., (Royal Dutch-Shell) of Tampico, is investigating operating methods in the Gulf Coast region.

E. A. Wetmore, Comptroller for South American Gulf Oil Company, of New York City, is in Maracaibo on annual inspection of the company's accounts and properties.

Bridal Party

When **Bill Farrand,** recently promoted from position as engineer with The Texas Company at Signal Hill, to superintendent of the company's operations in the South Mountain area at Santa Paula, decided to get married, he called his friend, E. L. Decker of Martin-Decker, and asked for the loan of the Martin-Decker plane "with great secrecy." The plane was promptly furnished, Farrand, the bride, and the best man, Bill Gross, formerly Ferrand's boss in Roumania for the Romana-Americano, flew to San Diego and returned after the knot was tied.

However, the boys at Long Beach, appreciating the value of secrecy, had phoned everybody who knew Bill, had arranged for them to be on hand, and in advance had painted the plane with numerous slogans, etc., that practical jokers are wont to decorate cars with. Upon the return of the bridal party they found what appeared to be a mass meeting awaiting them, and as Ferrand and the bride stepped from the plane Bill was apprehended by two husky Long Beach cops, who charged him with landing without a "landing license."

H. B. Burlow, vice-president, Templeton, Kenly & Company, manufacturers of a special oil field jack, spent the past few weeks in the Mid-Continent and Gulf Coast oil country studying conditions and calling on his company's distributors.

W. H. Cooley, who represented California at the recent Washington oil conference, has returned to the West Coast. He has submitted a report of the meeting to Governor Rolph of California.

Eugene Bunescu, superintendent for Concordia of Roumania, is spending three or four months in California. He is making his headquarters at Oil Well Supply Company in Los Angeles.

D. J. Moran, president of Continental Oil Company, has returned to the Mid-Continent, following a business trip to California.

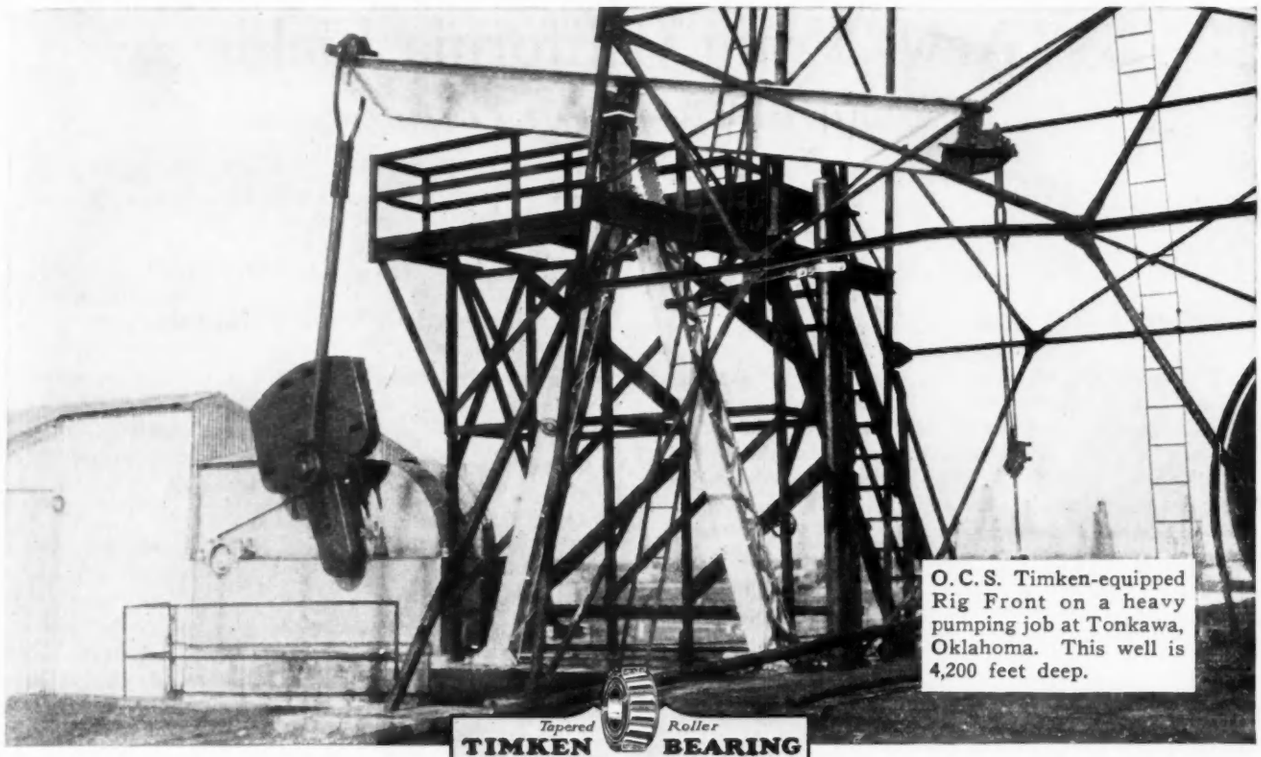
Executives of Universal Consolidated Oil Company, elected recently at the annual stockholders' meeting at Los Angeles, include O. H. Muller, president, E. G. Starr and R. E. Stearns, vice-presidents, L. E. Long, secretary and treasurer, R. B. Charlsworth, assistant secretary, and J. S. Wallace, J. W. Pauson, E. D. Lyman, J. E. Hare and R. R. Templeton, directors. Muller, Starr, Stearns and Long are also directors.

Guy V. Lewis, 40, who recently widened the Joiner field section of the East Texas district several miles to the west and across into Smith County with a big producer, died in a Tyler hospital April 22 from pneumonia. Lewis scored his successful producer on land owned by members of his family.

O. D. Donnell, president of Ohio Oil Company, Findlay, Ohio, accompanied by W. W. Fleming, Tulsa, vice-president Mid-Kansas Oil & Gas Company, and R. J. Berry, Findlay, president Illinois Pipe Line Company, completed a tour of the East Texas properties of the latter two concerns last week.

Walter W. Scheumann, until recently chief chemist for Cities Service Refining Company of Boston, has been appointed chief chemist for Empire Oil and Refining Company and is to have headquarters at Okmulgee, Oklahoma. In this capacity Mr. Scheumann will have under his supervision the laboratories of the Empire refineries at Chicago, Ponca City, Cushing, Okmulgee, and Gainesville, Texas. He succeeds A. L. Davis, who has been transferred to the patents department of Doherty Research in the New York City office.

Mr. Scheumann is a graduate in chemical engineering of Purdue University having entered the service of Cities Service Refining Company in 1924 from the laboratories of Aluminum Company of America.



O. C. S. Timken-equipped Rig Front on a heavy pumping job at Tonkawa, Oklahoma. This well is 4,200 feet deep.

Tapered Roller TIMKEN BEARING EQUIPPED

O. C. S. Rig Fronts make light work of heavy pumping. They are equipped with Timken Bearings at the vital points of friction and hard service . . . 12 Timkens are used, assuring the operating and maintenance economies, dependability and long life associated with Timken tapered construction and Timken-made steel in all types of oil field machinery.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* BEARINGS

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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Kettleman Hills Activity At Highest Level Since 1929

Coalinga, Calif.—The combined activities of the Kettleman North Dome Association, Standard Oil Company and certain fee interests have gradually increased field work at Kettleman Hills to the highest level since the height of development during 1929-1930. Twenty-six wells are active and two more locations are expected. The unit plan of operation may prove effective, but the fact that the fee land remains largely outside the agreement will affect further curtailment of field work.

Standard Oil Company of California is completing Fee 21-7Q at 8091 feet, having landed a string of 9⅝-inch casing at 6632 feet. This well will test more formation than any completion now producing. The company is drilling three wells on Section 29-21-17, all being offsets to Superior Oil Company's Huffman 1.

Superior Oil Company has made a location for Huffman 3 and is apparently not worried over the outlet of gas and oil. Huffman 2 is drilling just above 8000 feet and has been drilled in remarkably good time. A string of 9⅝-inch casing was landed at 6990 feet. Huffman 1 is producing about 11,000 barrels of oil from 8323 feet, the gas production having dropped to 18,000,000 cubic feet.

Necessity for offsets and failure of a few operators to join the unit plan of operation probably will result in a sustained drilling program during the remainder of the year.

Test of Huntington Beach Well Proves Disappointing

Huntington Beach, Calif.—W. E. McCaslin's Transport 17, deep test in the Huntington Beach field, is being surveyed to determine the condition of the hole, following an unsuccessful production test at 7658 feet. The hole was swabbed to 6100 feet and fluid rose rapidly during a short suspension. The action of the well during the test was disappointing and there was little evidence that production could be obtained under present conditions. A core barrel was lost in the hole and will be sidetracked after a shot has been placed on bottom.

Contrary to reports, this well does not look promising at this depth. Several locations for deep tests have been made, but a good completion will be required to start actual operations. Conditions are such that more than oil showings and rumors are needed to prompt a drilling boom. Superior Oil Company is drilling at 5850 feet in Eberle 1 and at 6400 feet in Gillette 7-2, both destined for the deep zone.

The company's Fee 1 has been shut down at 7491 feet for several weeks and will not be tested until the two drilling wells are within striking distance of the formation to be tested.

California "Marginal Interests" Find Operation Very Difficult

Los Angeles.—It is no longer a secret that so-called "marginal interests" are finding it difficult to operate wells, leases or companies, whichever the case may be, in the face of present conditions in California and elsewhere. There were dozns of individuals and companies operating with some degree of success during the 1926-1930 period of high prices, but the wide-open break in crude oil and gasoline prices has placed a new standard of competition among the group as a whole.

An analysis of the present situation shows that many of the operators and companies now in distress never should have started in business, but a survey also shows that many legitimate operators are losing money under the current price schedule. Many of the cripples that are falling by the wayside started in the form of promotion schemes. Others over-expanded during prosperous times and now find that the increased capitalization is working against them with a terrific force. Stock-selling schemes of various kinds resulted in the springing up of producing companies of questionable strength. In many instances these small companies obtained a little production and managed to pay salaries and current expenses. Stockholders received an encouraging annual statement every year, but nothing more.

The casualty list among this type of operator will be especially high if an improvement in the industry does not take place soon. When light oil was bringing $1.50 during the 1926-1930 period, the shoestring operator managed to meet the pay roll. Many strictly legitimate operators barely managed to operate in the settled fields on oil sold at what now seems a very high price.

With light oil bringing 35 cents per barrel, the average producer who depends altogether on his crude output for revenue is not making any money. Pumping wells which yielded a few barrels and barely paid their way on $1.50 oil cease to be a profitable investment. Large flowing wells in the flush fields may be operated on 35-cent crude, but the small stripper well may be shut in to prevent a loss through operations barely profitable under much better conditions.

Out of the present depression may come a more stable condition than existed during certain periods of past years. Fewer companies will remain, but the stronger ones should be able to weather the storm.

Many operators claim that the extremely low crude and gasoline prices are not justified, and that the major companies are getting panicky. Claims are also made that the larger companies are attempting to eliminate producers and marketers who have not curtailed or who have not signed certain producing and marketing agreements. Major operators deny the charges and counter with the claim that production is still higher than it should be.

Forty gravity crude oil is worth more than 35 cents per barrel, if 20 gravity oil is worth 65 cents per barrel, opera-

tors claim, and it must be admitted that they have grounds for their claims. The extremely low price gasoline is supposedly responsible for the low crude price schedule.

Aftermath of High Prices

One extreme follows another, and the present low crude prices are the aftermath of a long period of high prices. It is evident now that the crude price schedule maintained during 1928-1930 was not justified. Most of the overproduction of the period was stored at these high prices. Such a price schedule has caused the principal purchasing companies to run to cover in the opposite direction. They are anxious to offset the effect of high priced storage with whatever saving they can make through limited purchases of cheap crude.

Large operators who have excess stocks and who are able to supply the bulk of their needs from their own leases are going to be careful with their purchases in the future. It is an admitted fact that at least two companies bought twice as much oil as they should have purchased during 1929 and 1930. Limiting of these purchases in the future will limit production to some extent. It is believed that production of crude oil in the future will be governed to a considerable extent by the ability and willingness of purchasing companies to take the crude. In the past a "free market" has absorbed all production at current posted prices.

California is very much disturbed by the rapid rise of East Texas production. With an extensive pipe line system under construction, fear has been expressed that much of this oil and gasoline will be dumped on California. If East Texas production keeps climbing, there is little likelihood that the California crude price schedule will be raised much. This would apparently invite the dumping of crude and gasoline from outside points. With light oil selling for 35 cents, a barrier is automatically thrown up against invasion. Texas has been affected for years by California shipments to the Atlantic seaboard, and it is doubtful whether the former would hesitate to send oil west if it could do so at a profit.

Various Eastern markets are now taking a little less than 60,000 barrels of gasoline daily from California. This quantity should be considerably greater during the summer months. If plans of East Texas operators materialize, it is thought that California's shipments to the Atlantic seaboard will drop.

The committee on economics is striving to make operators see the wisdom of further shutting in production. It is natural that the small companies do not want to curtail their output further. Elimination of a portion of California's crude, gasoline and fuel oil markets will force a lower production, however, due to absence of purchasers for the excess output.

Oil Producers' Sales Agency has signed operators who represent more than 60 per cent of the independent production of the state, the organization having been formed to provide a market outlet for the allowable. Small companies produce more than 45 per cent of the state total and a drive is under way to bring all independents together under a common banner.

The Kettleman Hills injunction decision was more far-reaching than anticipated and one of the principal producers has asked for a modification of the order. Strangely enough, this company strongly backed the state gas conservation law, but the injunction was stringent enough to affect wells operated by it. This caused a protest to be filed for modification. Gas waste in this field will be a thing of the past as soon as the wells now flowing from the top of the Temblor formation are deepened to produce from the full thickness of the sand.

Plugging Off Bottom Water In Deep Test at North Belridge

Bakersfield, Calif.—Union Oil Company is plugging off bottom water in Belridge 17, deep test in the North Belride field, following a fairly successful production test. The well was tested below the shoe of the 6⅝-inch casing at 5350 feet, after drilling to 5541 feet. The initial flow was at the rate of 1200 barrels per day, but volume decreased rapidly and the well actually produced less than 300 barrels in 19 hours.

A decision to deepen the well resulted in the flow of salt water from 5600 feet. A plug was set and another attempt to complete the well will be made.

The productive thickness of the Temblor seems to be definitely limited in this part of the field, but there is a possibility that the formation will produce at some greater depth. The structure will produce along a very narrow strip and the trend seems to be toward the west. The dip to the east is rather sharp, as shown by cores from wells drilled by Richfield Oil Company and Ohio Oil Company. The field probably will not be the factor predicted for it at the time of the first deep completion.

Playa del Rey Field's Two Completions Unimportant

Los Angeles.—Two small completions in the Playa del Rey field during the week were not enough to justify extensive comments on this townlot area. One shallow well and a deep one failed to throw additional light on the two producing zones and it is doubtful whether field work will support the present number of projects during the summer months. Twenty-three wells are under way, and of this number a majority will be completed in the deep zone.

The decline of the shallow zone has not been sharp, but the fact that initial production of the average completion was low has shown the futility of completions in the face of conditions.

The deep zone offers a better chance at a fair initial production, but there is a limited area in the hands of the smaller companies which has not been developed.

Townlot activity has been reduced to a small number of tests which have funds available. It has been impossible to operate the small wells at a profit during the past few months and the creditors are having their worries.

The deep zone will produce a lot of oil on the larger leases, but development on these tracts will be slow.

Will Deepen Few Wells At Santa Barbara Mesa

Santa Barbara, Calif.—Efforts to deepen and complete a few wells in the Santa Barbara Mesa field may be attributed to the slightly better demand for fuel oil, but the record of the field is so bad that only a limited number of wells will be worked over.

Palisades Petroleum Company recently re-completed Meigs 2 with an initial production of 325 barrels from 2175 feet. The well was pumping a small amount of 19.5 gravity oil from 2090 feet and deepening was especially effective.

Several wells have been completed at various depths in this questionable field, but all have been famous for their rapid declines.

This company is also rigging up to deepen another well on the Meigs lease, and at least two other wells will be deepened and re-conditioned on other leases.

The Santa Barbara Mesa field was discovered in 1929 and

soon a rush was on to develop the shallow structure. Hardly a commercial producer was obtained from more than 30 wells which were started within a few weeks. The discovery well soon went to water and the structure proved to be badly faulted. The small amount of oil produced in the field is bringing a good price, due to the higher schedule for heavy crudes.

Wildcat Deep Test Two Miles East of Rincon Holds Interest

Ventura, Calif.—Chanslor-Canfield Midway Oil Company's Hobson A2, a deep test two miles east of the Rincon field, has become one of the most interesting wildcats in California. From the standpoint of depth alone the well is attracting attention, having passed 9360 feet to become one of the deepest wells ever drilled. The formation is a tough brown shale and has shown little change below 9000 feet. Alternating streaks of brown shale have been cored below 9200 feet.

Drilling of such a deep well is an excellent test of the theory that the Ventura valley is a potential producer at depths far greater than present drilling methods are capable of reaching. A production of more than 100 barrels was obtained on the compressor at 7489 feet in Hobson A2, but such an output was considered hardly commercial at such a depth.

Continental Oil Company is offsetting this very deep test and is now drilling ahead at 2600 feet in Grubb 1.

Los Angeles.—The water shut-off test in Continental Oil Company's McGrath-Selover 24, deepest well ever drilled in the Seal Beach field, was satisfactory and the hole will be cleaned out to bottom for a production test. The well was drilled to 9054 feet and streaks of oil sand were cored near bottom. A string of 6⅝-inch casing was cemented at 8125 feet, giving the well a considerable thickness from which to produce. The company is not making broad claims for the deep test, however. Shallow production at Seal Beach is found around 4400 feet, with two deeper productive zones at 5000 feet and 5500 feet. A still deeper production was developed, but the output was limited.

Santa Barbara, Calif. — Rio Grande Oil Company and Barnsdall Oil Company, joint operators in the Elwood field, will deepen Bishop-Evans 1, an outpost test, from 4930 feet. This test was shut down in the Sespe sand, and will not be abandoned before a more exhaustive effort is made to develop production below the zone which produces in the main field. The Elwood field is well defined in the Vaqueros zone, principal producing formation, but might produce over a greater area in the deeper formations. Such a theory is subject to the odds prevailing in the average wildcat, however.

Bakersfield, Calif. — Shell Oil Company is surveying Williams 1, the Semitropic wildcat which was drilled to 9702 feet, and may plug back to some higher level. This record well has attracted wide attention, but at no time has it shown signs of becoming a commercial producer. Thin streaks of sand showing oil and gas were cored below 9000 feet, but the present production test was not prompted by a belief that the formation should yield oil in commercial quantities. Running and cementing of a string of 5¾-inch casing at 8475 feet was accomplished without mishap and the swabbing test was concluded with the hole open only to 8922 feet.

Jacalitos Hills Wildcat Not Considered Promising

Coalinga, Calif.—Test of the water shut-off in Associated Oil Company's Mitchell 1, a wildcat test in the Jacalitos Hills, a short distance south of Coalinga, was not altogether satisfactory, but the State Mining Bureau granted permission to continue for a production test. The well was drilled to 4503 feet and a string of 13⅜-inch casing cemented at 3680 feet for a test of showings found below this depth. The hole was plugged to 3685 feet and the test was to determine whether the water was shut off, rather than a production test.

The fluid rise was about 65 feet in the 13⅜-inch casing, but the presence of gas could have accounted for the higher pick-up by the bailer. A production test will be made if there is no further evidence of incoming water at or below the shoe of the casing.

Continental Oil Company (then Marland) drilled a well to 4379 feet on an adjoining lease several years ago and apparently tapped the Temblor formation before abandoning the test.

Ventura, Calif.—Associated Oil Company is finding it increasingly difficult to pull cores from Lloyd 57, a deep test in the Ventura Avenue field. At a depth of 8825 feet, circulation of heavy mud for three days was necessary to kill the flow of gas. Attempts to come out of the hole with a core aids the gas enough to cause trouble and progress is very slow. Coring of rich oil sand between 8100 feet and bottom changes the status of the Ventura Avenue field and may result in a new plan of development. During the past three years, the 7000-8000-foot level was developed, but a gradual increase in the water cut prompted deeper drilling. Cores taken from below 8100 feet show no water and at about 8700 feet the oil sand was very rich.

Production of Carbon Black Shows Increase During 1930

Washington, D. C.—According to the Bureau of Mines, carbon black production in 1930 increased to a new high level when total output amounted to 379,942,000 pounds, an increase over 1929 of 13,500,000 pounds, or 3.7 per cent. The oversupply of carbon black in 1930 was reflected in declining prices. The average value per pound reported by producers for that year was 3.91 cents. This represents the lowest price recorded since the compilation of statistics was begun by the Bureau of Mines.

The estimated quantity of natural gas burned in the production of carbon black in 1930 amounted to 266,471,000,000 cubic feet, a slight increase over 1929. The average recovery of carbon black per 1000 cubic feet of gas burned was 1.43 pounds, the highest recovery recorded since statistics were first compiled. A factor in the increase in average yield in recent years has been the introduction of the retort process by which as much as 10 pounds per 1000 cubic feet of gas have been obtained. Texas is credited with 72 per cent of the production total of the United States. The Panhandle of Texas produced 94 per cent of all the carbon black made in Texas in 1930. The bulk of the sales of carbon black in 1930 was made to rubber companies, followed by ink companies, paint companies and others.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

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Oklahoma City Production Off 42,405 Barrels Daily

Oklahoma City.—Completion of potential gauges in the Oklahoma City pool brought about the expected decline in production during the past week when the daily average was 150,285 barrels, a drop of 42,405 below the week before. Daily average production for the state declined only 39,635 barrels due to slight gains in the Seminole district and miscellaneous pools. With potentials established in all flush areas, production from the Oklahoma City pool should be below normal during the next few weeks when operators will be making up averages established during the first 15 days of April when potential tests were being taken. Production from the pools in the Greater Seminole district should run about normal, varying from 150,000 to 156,000 barrels daily.

Only a small percentage of the 61 wells drilling or shut down waiting on cement to set in the Oklahoma City pool can be considered important since a small number are outside locations and the others are located inside the defined productive area. Shaffer et al's Giles 1, NE NE NE SW Section 15-11n-3w, extended production approximately one-quarter mile when it came in flowing at the rate of more than 43,000 barrels daily. Production is coming from Wilcox sand topped at 6390 feet and penetrated to a total depth of 6550 feet. The initial four-hour gauge of 7184 barrels was taken under 220 pounds back pressure and gas was gauged at the rate of 42,000,000 cubic feet. Oklahoma Pipe Line Company has connected. Westgate Oil Company's Carey 1, SE NE SE Section 34-12n-3w, on the northwest end of production, brought the total of producers inside the city limits up to 139. It produced 6370 barrels the first three hours and 15 minutes along with gas at the rate of 15,000,000 cubic feet, from 144 feet of Wilcox sand topped at 6261 feet. Drilling was carried to a total depth of 6410 feet, five feet below the base of the Wilcox sand.

Evidence of the potential importance of the upper sands as gas producers was strengthened during the week when Indian Territory Illuminating Oil Company completed plugging back its Emmerson-Joyce 1, NE NE NE Section 25-11n-3w, in the older portion of the pool. This well was originally completed as a small Arbuckle lime producer late in 1929. Plugged back from 6664 feet to 4020 feet and shot with 20 quarts at 4010 to 4020 feet, it gauged 150,000,000 cubic feet.

Shell Petroleum Corporation and Phillips Petroleum Company are building rig for their Egermeier 1, W½ SW SW SW Section 23-11n-3w, slightly less than one-half mile southwest of production in the older part of the pool. It is understood that this location is being made largely because of the showing of Shaffer et al's Giles 1, which is located approximately 1½ miles to the northwest and about the same distance southwest of the fault plane. Shell Petroleum Corporation's Egermeier 1, NE NE SW Section 23-11n-3w, nearest producing well to the new location, was a comparatively small well but apparently is producing from the lower part of the Simpson formation. If this correlation is correct and the Wilcox sand does not thin to any appreciable extent except on the south end of the pool, it is logical to expect that the operators may pick up production in that member of the Simpson formation.

Recent locations include Indian Territory Illuminating Oil Company's Stevens 1, NE NW SW SE Section 15-11n-3w; American Oil & Refining Company's Washington 1, CW½ SW NW SW Section 35-12n-3w, adjacent to the M.K.&T. railroad on the extreme north end of the pool; and Wilcox Oil & Gas Company and Daffie's Daffie 1, SW NE SW NW Section 3-11n-3w.

Tatums Pool Records Two Failures During the Week

Ardmore, Oklahoma.—Drilling operations in the Tatums pool were rewarded with two dry holes during the past week and no new production was obtained. Louis Sikes will abandon his Hopson 1, NE NW NE Section 25-1s-3w, located midway between two dry holes on the south edge of the pool. When bailed down the hole showed only a small amount of heavy black oil from sands between 2134 and 2526 feet; total depth was 2620 feet in black shale. The test was a southeast diagonal offset to Trevelyn Oil Company's Mitchell 4, a representative producer completed early this year. Lateral gradation and lensing of sands make edge locations extremely hazardous even though within 660 feet of commercial production. Magnolia Petroleum Company, which has drilled several deep dry holes in the area, is pulling casing preparatory to abandoning its L. C. Burton 1, NW SE NW Section 30-1s-2w, one-quarter mile southeast of production. This test was plugged back from 4115 feet to broken sands logged between 1500 and 1600 feet. Further testing revealed only salt water. Lesh and McCall are drilling below 2400 feet in their Carter 2, NE SW SW Section 14-1s-3w, on acreage formerly held by Shell Petroleum Corporation. No showings had been logged at 2350 feet although the test is located directly between two producers which had showings at shallower depths.

Obermeyer and Taylor have plugged and abandoned their Skelton 1, NE SW SW Section 32-1s-7w, Stephens County wildcat about five miles south of Duncan; total depth is 1588 feet. Crane and Rankin's Adkins 1, NE NE SE Section 14-1n-9w, about 10 miles northwest of Duncan, is still shut down awaiting decision as to whether to abandon or drill deeper. Present total depth is 3265 feet, several hundred feet deeper than the average wildcat test and approximately 900 feet deeper than the lowest producing sand in the north Duncan pool.

Only Four Wells Drilling Now in Seminole District

Seminole, Oklahoma.—Those familiar with the Seminole district a year ago find it hard to believe that only four wells are now being drilled in the entire area. Recent completions in the Carr City pool have forced some activity in that area and completion of Lippa Drilling Company's Phillips 1, SW SW SE Section 8-9n-6e, extension to the East Earlsboro pool, may be responsible for a few starts.

During the week ending April 13 status of development and production in the district was as follows: locations, four; rigs, three; drilling wells, four; producing wells 2330 averaging 155,085 barrels daily or an increase of 46,062 barrels daily over the preceeding seven-day period.

Indian Territory Illuminating Oil Company had 1000 feet of oil in the hole at 4222 feet in its Bowlegs 1, NW NW SE

Section 26-9n-6e, old well drilling deeper in the Seminole City pool. Top of the second Wilcox was encountered at 4209 feet and a small showing of gas. A 10-quart shot at 4211 feet to 4221 feet apparently bridged the hole and at the time of last report operators were cleaning out with 1000 feet of oil standing in the hole. J. H. Gwin Drilling Company et al were drilling at 4222 feet with nothing showing in their Earlsboro 1, NE SE NW Section 33-9n-6e, approximately one mile west of the Seminole City pool. Top of the Viola lime was encountered at 4170 feet and top of the Simpson formation at 4212 feet.

South of the Seminole district in the Allen area, Minnehoma Oil and Gas Company completed its Brown 2, SEc NE NE Section 17-7n-8e, gauging 41,000,000 cubic feet at 955 pounds rock pressure. Production is coming from sand at 2905 to 2922 feet; the well is shut in. Boettcher Oil and Gas Company is waiting on cement to set on the five-inch casing in its Walker 1, CNW SW Section 11-7n-8e, after topping the sand at 2911 feet.

Wanette Completion May Result In Offset Drilling Campaign

Seminole, Oklahoma.—Payne Drilling Company's Bullock 6, NEc SW NE Section 22-6n-3e, gauged 1123 barrels the first 24 hours from 13 feet of sand topped at 3587 feet. This is the sixth producer on the discovery lease and a completion which bids fair to cause the drilling of east and west offsets which would in turn force the drilling of at least four tests by the owners of surrounding acreage. As mentioned in a recent issue of THE OIL WEEKLY, completion of a well in the southwest corner of the Bullock farm would force the drilling of seven other wells. Size of the last few completions in this part of the pool indicates the possibility of such a forced campaign although it would be against the policy of the holders of offset acreage and it will not be done unless unavoidable. Magnolia Petroleum Company's Harris 1, NW NW SW Section 6-6n-4e, about half way between the Wanette and Pearson Switch pools, was drilling below 4135 feet in Sylvan shale.

Magnolia Petroleum Company swabbed and flowed 803 barrels the first 24 hours from its Wood 3, SWc NE SW Section 29-6n-6e, new producer on the south end of the Konawa pool. First sand was encountered at 2744 to 2782 feet and the second sand at 2805 to 2814 feet; total depth is 2830 feet.

Development in the Wewoka Townsite pool in Section 30-8n-8e continues to be interspersed with streaks of good and bad luck. It has been the scene of two spectacular oil fires as well as a number of failures at locations which appeared to be favorably located on the structure. Burke-Greis Oil Company's Henshaw 3, NW NE SW Section 30-8n-8e, made better than 1400 barrels in 24 hours from an upper horizon after finding a hole full of water at 4116 to 4132 feet in the Wilcox sand; eight-inch casing was ripped at 3830 to 3868 feet and 3800 to 3803 feet. An 80-quart shot was placed at 3840 to 3870 feet, resulting in a flow of 1140 barrels the first 24 hours thereafter. The hole bridged at 3804 feet and when cleaned out to 3825 feet production increased to 1410 barrels in 24 hours; cleaned an additional 10 feet production increased to 1450 barrels.

Two wells are due for completion in a recent awakening of activity in the West Chandler pool in Lincoln County. Coline Oil Company's Telford 2, SW NW SE Section 7-14n-4e, was drilling the plug late in the week after setting casing on top of Viola lime at 4895 feet. Total depth is 4920 feet. Slick Estate's Kentzelman 2, SE SE SW, of the same section set eight-inch casing at 4901 feet after topping Viola lime at 4880 feet. Total depth was 4906 feet in Viola lime. Kentzelman 3 and 4 are rigging up rotary.

Most Kansas Pools Record Drilling Activity Decline

Wichita, Kansas.With exception of development in the Ritz-Decker-Garrett area of McPherson County, all Kansas pools are showing a marked decline in activity. Five wells were completed and six locations and new starts announced during the past week, making it one of the most inactive periods that Kansas operators have seen in several years. Impetus given new work in McPherson County during the past few months through drilling obligations and "farming out" of acreage by Shell Petroleum Corporation was not in evidence, one eastern and four western counties being mentioned in the list, with McPherson County scoring only one.

One of the interesting developments of the week was the apparent extension of the Study-Turner area in northeastern Reno County. Reserve Petroleum Company and Darby Oil Company had a hole full of oil in their Georing 1, SW NW NE Section 1-23s-4w, approximately one-quarter mile north of the Study and Turner discovery well. First production came at 3306 feet when the lime was topped and at 3336 feet the well flowed 70 barrels in 14 hours. Operators planned to deepen by stages until maximum production has been obtained. The new area is located about 12 miles east of Hutchinson and the same distance southwest of the Voshell pool on a northeast-southwest line which passes through that area and the old McPherson gas field. Shell Petroleum Corporation and Continental Oil Company's Blake 1, SW SE SE, west offset to the discovery well in the SW SE SE Section 1-23s-4w, was drilling around 3300 feet and making about 2,500,000 feet of gas.

Lario Oil & Gas Company completed its Lacquement 1, NW SW NE Section 6-20s-1w, after a fishing job of several weeks. It is rated at 1556 barrels daily on the potential list, production coming from chat topped at 2923 feet. Wakefield et al had top of the chat at 2906 feet in their Koehn 1, NE NE NW Section 36-19s-2w, and was flowing at an estimated rate of 50 barrels per hour at the total depth of 2965 feet. This is several feet higher than chat had been expected and serves to strengthen the belief that the Ritz and Decker structures are directly connected instead of being separated by a saddle as was at first suspected.

Cress et al's Sharpe 1, SE NE Section 13-20s-10w, discovery well in the Schurr-Raymond area of Rice County, is being estimated at 2000 barrels from Siliceous lime at 3333 to 3338 feet. No initial gauge has yet been taken but the nature of a 45-minute flow made about two weeks ago indicates the estimate is conservative.

Northeast of Eastborough

Blackwell Petroleum Company et al encountered a hole full of water in chat at 2953 to 2959 feet in their Rounds 1, NE NE NE Section 17-27s-2e, approximately one mile northeast of production in the Eastborough pool in Sedgwick County. Work has been suspended pending decision as to whether to abandon or to test the Wilcox horizon. In view of the depth at which chat was encountered it is unlikely that drilling will be continued to the lower horizon.

Texas-Interstate and McNabb's Phillips 1, CSW Section 1-34s-38w, is a 9,500,000-foot gasser in the southeastern portion of the Hugoton gas field in Stevens County. Sidwell and Kuhn's Ferguson 1, CSE Section 9-34s-38w, in the same part of the field, gauged 10,500,000 cubic feet at 2800 feet. Continued drilling appears to offer the only solution to the question of how much territory the field eventually will cover. The present defined area covers a major part of eastern Morton County and western Stevens County, extending northeastward into Grant County and southward far into Texas County, Oklahoma.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Austin, Texas.—The Texas Railroad Commission is expected to approve an order on East Texas, Wednesday, April 29, giving Longview 35,000 barrels, Kilgore 60,000 barrels, and Joiner 65,000 barrels—a total of 160,000 barrels.

East Texas Operators Ask Allowable Increase May 1

Longview, Texas.—Operators in East Texas started the current week off with production limited only by transportation and storage facilities after having partially reduced their production on April 23 to conform with the formal order of the Texas Railroad Commission. Failure of some of the operators to fall in line with the proration program within 24 hours after the starting date fixed by the commission resulted in others opening up wells on April 24, and on the following day all restrictions had been discarded, including the resumption of the use of air lift for flowing wells in the Joiner field. Plans are to make a new attempt at proration enforcement May 1, with a larger production quota promised for each of the three areas.

Members of the central proration advisory committee for East Texas met in Longview April 27, with Chas. F. Roeser, Fort Worth, chairman of the committee, presiding, and recommended that allowable production of the district start off with 160,000 barrels, instead of 130,000 barrels daily as originally ordered by the commission. Producers and purchasers protested against the smaller figure since the quota did not afford sufficient oil to fill the requirements of the four major trunk lines now in operation, and about 30 racks. There are also three local refineries in operation. It is expected that the commission will act favorably on the committee's request for a larger production allowance, which will afford the Kilgore field 60,000 barrels; Joiner field 65,000 barrels; and the Longview field 35,000 barrels daily at the start of proration, with provisions made for regular increases during the life of the order.

Facilities for disposing of the proposed production increases will be more than adequate, as the number of local refineries will shortly be increased to 10 or 12, while there are eight separate trunk lines in sight, including the second line for Humble Pipe Line Company, with a total of 40 rack already assured.

Shreveport, La.—Atlas Pipe Line Company's eight-inch electrically welded 57 mile trunk oil line from its loading rack two miles southwest of Longview, Texas, to the Spartan Refining Company's 10,000 barrel refinery at Jewella, Shreveport suburb, was tied in and tested Monday night. Line was completed in 16 working days, construction having been started April 6. The line has daily capacity of 24,000 barrels, but for present only 18,000 barrels daily will be run.

Spread of Salt Water Cause For Concern in Kilgore Area

Tyler, Texas.—Spread of salt water into new sections of the Kilgore field has resulted in immediate steps being taken by the principal lease owners in the affected area to pinch back wells instead of waiting until a new attempt is made on proration enforcement May 1. More than a half dozen wells, including some of the largest completions in the field, were making water with oil early this week, with every indication that a large area would be swept by water unless the practice of throwing wells open is discontinued. Until the past week end only two wells on the Florey lease, located on the west edge of the field, had yielded water, but late completions on nearby leases and drilling of wells too deep into the Woodbine soon brought on an epidemic of cut oil troubles for operators.

East Texas Refining Company's D. Wills 1 was completed making 570 barrels of fluid on the first hour open flow test from sand at 3688 to 3693 feet, with 10 per cent cut oil, it was drilled to 3315 feet below sea level.

Turman Oil Company's Brightwell 1-A, located in the southwest part of the Sevier Survey, drilled Woodbine sand at 3623 to 3685 feet, followed by sandy-shale at 3685 to 3723 feet, with an initial flow of 100 barrels of fluid per hour through choke on tubing, with 40 per cent b.s. and water showing. It was drilled to 3356 feet below sea level, such a depth being considerably below the acknowledged danger line on water.

Both of the above wells have been pinched to a small output, as no facilities are available for disposing of the water, and damage suits will follow should the water reach nearby streams.

Gulf Production Company's Birdsong 1, located in the northwest portion of Isaac Ruddle Survey, approximately two miles due north of the Kilgore pool discovery well, will probably be shut in and plugged back after having developed water trouble. When completed over two weeks ago, it was rated as a 20,000-barrel well, but early this week, with the flow pinched in to 500 barrels daily, it showed approximately 10 per cent salt water. It was then pinched to 35 barrels per hour and resumed production of pipe line oil.

Total depth of Birdsong 1 is 3661 feet. Top of the sand is 3212 feet below sea level, and bottom of the hole is around 3300 feet sub-sea, the oil sand having penetrated nearly 100 feet. Location of this well is immediately south of north line of Isaac Ruddle Survey, and approximately 700 feet east of the northwest corner of the survey.

Shell Petroleum Corporation's Wills 1, located near the first water wells on the Florey land, is showing a small percentage of water even though the flow has been pinched to a small volume, and only two feet of sand was taken because of the water hazard.

Austin, Texas.—Senate Bill 595, which releases for public sale the public lands of East Texas river beds, has been returned to the Senate for amendment. Senator Pink Parrish, author of the bill, stated he intended to amend and pass the measure so that it would include only the Sabine River lands.

Texas Pipe Line Company's 10-Inch Unit Now Operating

Tyler, Texas.—Functioning strictly as a common carrier, The Texas Pipe Line Company began operating its 10-inch trunk line system from the East Texas district April 24, and is reported to have booked a capacity load for the next few months through crude handling contracts held with Houston Oil Company, Gulf Coast Pipe Line Company (Moody-Seagraves Interests), British-American Oil Company and others.

In transporting East Texas crude to the Texas Gulf Coast The Texas Pipe Line Company has adopted the following charges: trunk line rate 22½ cents per barrel, gathering charge in the field 10 cents, and terminal handling and loading on tankers, 2½ cents per barrel. When both the gathering and tanker loading services are furnished as well as trunk line movement, therefore, the total charge is 35 cents per barrel.

The Texas Company has not posted a crude price schedule for East Texas, and at present is drilling only one test in the district, same being located in Smith County and on the west edge of the Joiner field. This East Texas line is rated at 25,000 barrels daily capacity, and ties into the company's old system at Douglas station, Nacogdoches County, representing 51 miles of new line work.

Texas Company Looping East Texas Pipe Line

Henderson, Texas.—Texas Pipe Line Company is now engaged in looping its pipe line out of the East Texas field. The system began operating April 24 with capacity of 25,000 barrels daily, and the capacity will be increased to 50,000 barrels per day by summer unless plans are changed.

Arkansas Fuel Oil Company's eight-inch line from Longview field to Shreveport is nearing completion and is expected to be running oil next week, with capacity of approximately 25,000 barrels daily.

Humble Pipe Line Company is working on its eight-inch pipe line from Joiner field to Boggy Creek, where it will tie in to the company's line to the Gulf Coast via Groesbeck. About 25 miles remained to be constructed early this week. Humble Pipe Line Company has been moving oil out of Kilgore field through its line to Louisiana for over two weeks.

East Texas Production

Daily average production of the Joiner-Kilgore district and the Longview field is shown below, with number of producing wells included:

	Joiner-Kilgore		Longview	
Week ending—	No. wells	Daily average production	No. wells	Daily average production
February 18	22	19,090	1	6,511
February 25	24	24,954	1	7,044
March 4	39	51,475	1	4,578
March 11	50	75,170	1	7,170
March 18	64	75,540	5	14,021
March 25	81	104,345	6	17,769
April 1	115	119,500	11	24,990
April 8	159	165,250	16	26,000
April 15	198	210,208	25	38,180
April 22	234	239,510	30	58,480

Dallas, Texas.—Resignation of David Donoghue, technical advisor to the Central Proration Committee of Texas, has been announced by Robert R. Penn, Dallas, who is chairman of this committee that has been aiding the Texas Railroad Commission in proration activities. Donoghue will resume his consulting geological work with headquarters at Fort Worth, but will continue to serve as chairman of the statistical subcommittee and also act in an advisory capacity.

East Texas' Production Totals 9,374,000 Barrels to April 22

Tyler, Texas.—Accumulated production in East Texas since the completion of the discovery well to April 22 amounted to 9,374,000 barrels from 265 wells, with 42 separate leases in Gregg, Rusk and Smith Counties bearing completed wells that now have no pipe line connections.

The district advanced to a new record on production during the week ending April 22 in maintaining a daily average yield of 298,380 barrels.

The Kilgore field was credited with having produced at average rate of 169,890 barrels daily from 89 wells during this period, and the Joiner field averaged 69,610 barrels from 145 wells.

North and South Ends of East Texas Area Prove Productive

Tyler, Texas.—Extreme north and south ends of the East Texas productive area added more productive territory during the past week when outpost tests encountered oil saturated sand that indicates successful completions when cement plugs are drilled, thus giving the area a maximum length of about 30 miles in a northeast-southwest direction. Upshur County is to participate in production as result of the Mudge Oil Company's J. D. Richardson 1, D. Ferguson Survey, located in the southeast edge of the county and about three miles northwest of nearest production in the Longview field, making an oil flow during drill stem test April 26. This outpost test cored some sand with volcanic ash formation at 3725-42 feet, with a surface elevation of 451 feet. Although a commercial producer is assured, sand conditions herald a termination of the productive area a short distance to the north.

The south extension to the district was afforded by Sinclair Oil & Gas Company's Garvis 1, located in the southeast part of the Juan Vargus Survey, Smith County, and about 2½ miles southwest of the nearest producer in the Joiner field. Jarvis 1 cored thin oil saturated sand section with sandy-shale at 3699-3709 feet, then cemented casing to complete. This test is considered dangerously near the water level, as it was drilled to a sub-sea depth of 3320 feet. Salt water can be expected on the west side of the oil area at a minus range of 3300 to 3350 feet. Accuracy of this rule was emphasized during the past week when Sinclair Oil & Gas Company's A. Wiley 1, Jas. Jordan Survey, Smith County, flowed mostly hot salt water when tested in Woodbine sand at 3853-61 feet, with a surface elevation of 537 feet. Wiley 1 is located about one mile northwest of nearest production on the west of the Joiner field, and was drilled to a minus depth of 3324 feet.

Shrinkage in the western limits of production in the

(*Continued on page 76*)

East Texas Contracts Call for More Than 10,000,000 Barrels

(*Continued from page 58*)

With a private field gathering system, East Texas oil can be delivered to the Texas coast by trunk line at 22½ cents per barrel, or 32½ cents per barrel with gathering charges included.

John W. Olvey and Sample are credited with having sold 1,000,000 barrels of East Texas crude, deliveries to be made at rate of 10,000 barrels daily, if, as and when produced, to Atlas Pipe Line Company, which completed construction work early this week on its eight-inch trunk line from East Texas to Jewella, Louisiana, a refinery center near Shreveport. Olvey is a director of Atlas Pipe Line Company.

Field Operations in New East Texas Area

RUSK COUNTY OPERATIONS

Operator	Locations	Derricks & Rigs	Active Tests	Total
J. S. Abercrombie-Harrison Oil Co.	3	.	1	4
Geo. S. Anderson & Cox	.	.	1	1
W. D. "Andy" Anderson et al	.	.	1	1
Arkansas Fuel Oil Co.	.	1	.	1
Pat Armstrong & Pitts	.	1	.	1
Armstrong et al	.	1	.	1
Babcock-Gordon Oil Co.	1	.	1	2
Nick Barbare (U. O. G. & M. Co.)	1	.	.	1
Beard & Hammond	.	.	2	2
Berry & Lewis	.	1	1	2
Bill & Dave Oil Corp.	.	.	1	1
Big Indian Oil Co.	.	.	2	2
Dan S. Brooks, Trustee, et al	.	.	1	1
Burton Drlg. Co. (Sabine Synd.)	2	.	2	4
Campbell et al	.	1	.	1
Carolyn Oil Corp.	1	.	.	1
Roy I. Carter (C. P. Oil Co.)	.	1	2	3
E. L. Chapman et al	.	.	1	1
Collins & Helis	.	.	1	1
Cordova Union Oil Corp. et al	.	.	2	2
Crabtree-Rowe-Johnson	.	.	1	1
Cranfill-Reynolds Co.	.	2	2	4
Carl G. Cromwell & Williams	.	.	1	1
J. G. Curtis & Lowe	.	.	1	1
M. A. Crum et al	.	1	.	1
Danciger Oil & Ref. Co.	.	1	2	3
Devonian Oil Co.-Barnsdall Oil Co.	.	1	.	1
W. H. Dunning, Jr.	.	.	1	1
W. H. Dunning & J. H. Markham, Jr.	.	.	2	2
East Texas Loan & Dev. Co. (Shubert)	.	.	1	1
East Texas Ref. Co.	.	.	3	3
Edwards & Hall	.	1	.	1
Harry W. Elliott et al	.	1	2	3
Elzey Drlg. Co. et al	.	.	3	3
Geo. Fagg et al	.	.	1	1
Federated Oil Co.	.	.	2	2
Fitzsimmons & Thomason	.	1	1	2
Frank Foster-Deep Rock et al	.	1	1	2
Foster-Jeffries et al	.	1	.	1
Foster-Little et al	.	.	1	1
Fox-Butler & Hoflin	.	.	1	1
Gibson & Johnson & Merrick Drlg. Co.	.	.	1	1
Gilcrease Oil Co.	.	.	1	1
R. W. Giles (Shreveport Prod. Co.)	.	.	1	1
Dudley S. Golding-T. B. Cochran	.	.	1	1
Green Pine Oil Co.	.	1	.	1
A. M. Griffith et al	.	.	1	1
Gulf Coast Oil Co.	.	.	2	2
Gulf Production Co.	3	5	10	18
Gulf Prod. Co.-Devonian Oil Co.	.	.	2	2
W. B. Hamilton-Consolidated Oil Co. et al	.	.	3	3
L. P. "Pink" Hammond et al	.	1	.	1
Haynes Drlg. Co.	.	.	1	1
Heep Oil Co. & Houston Oil Co.	.	.	1	1
Heep Oil Corp. & Imperator Oil Corp.	.	1	.	1
Herring et al	.	.	1	1
Hicks Drlg. Co.	.	1	.	1
Hill & Jack Younger	.	1	.	1
John W. Hoosier et al	.	.	1	1
Humble Oil & Ref. Co.	3	5	13	21
Houston Oil Co.-E. M. Jones	1	2	6	9
Houston Prod. Co.	.	.	1	1
H. L. Hunt et al	.	.	1	1
N. W. Hunter et al	.	.	2	2
A. R. Irwin et al	.	1	.	1
Johnson et al	.	1	.	1
C. M. Joiner (E. R. Tennant, Rec.)	.	.	2	2
Ed. M. Jones et al	.	1	5	6
K. & M. Oil Co. (Indian States Oil Co.)	.	1	1	2
K. & P. Oil Co.	.	.	1	1
Karona Oil Co. (Heard)	.	2	.	2
J. S. Kimbrough et al	.	.	1	1
LaSalle & Davenport	.	.	1	1
Killerman & Hines	.	.	1	1
Killam & Reed (now K&P Oil Co.)	.	1	.	1
E. C. Laster, Inc.	.	.	1	1
E. C. Laster, Inc., & Miller	.	1	.	1
Lewis & Perkins	.	1	.	1
Lewis Prod. Co. & Selby O&G Co.	.	1	2	3
Lide-Taylor Oil Co.	.	1	1	2
Lide-Rowe Oil Co.	.	1	.	1
Pete Lively et al	.	.	1	1
Lucey Pet. Co. (Capt. J. F. Lucey)	1	.	1	2
Luling O&G Co.	.	.	2	2
John F. Mabee, Inc.	.	1	1	2
E. B. Madden et al	.	.	1	1
Magnolia Pet. Co.	1	4	5	10
Marine Corp. et al	.	1	1	2
Chas. McDonald-Merrick Drlg. Co.	.	.	1	1
C. L. McMahon et al	.	.	2	2
McMann et al	.	.	1	1
McIntyre Drlg. Co.	.	.	1	1
J. R. McMurrey et al	.	.	1	1
Melat et al	.	.	1	1
Merrick Drlg. Co. et al	.	.	2	2
Mid Kansas O&G Co.	.	2	1	3
C. B. Mitchell et al	.	.	2	2
Moody-Seagraves Interests	1	3	3	7
Moser et al	.	1	.	1
H. S. Moss & Pete Urschel	.	.	2	2
Moss et al	.	.	1	1
National Drlg. Co.	.	1	.	1
Navarro Oil Co.	.	.	1	1
Navarro Oil Co. & H. L. Brown & Hill	1	1	1	3
H. E. Oliver-F. H. Brown & Republic	1	.	1	2
Olson Bros. et al	.	.	1	1
John W. Olvey & Sample	.	1	2	3
Pace et al.	.	.	1	1
Pearl Oil Co. (Vitek)	.	.	1	1
Peery-Woody & G. W. Boller	.	1	.	1
Petroleum Marketing Corp.	.	.	1	1
Phares & Sample	.	.	1	1
A. W. Phillips Oil Operators	1	.	2	3
Pollard et al	.	1	1	2
Pilot Oil Co. (Tom E. Cranfill)	.	1	.	1
Ray et al	.	.	1	1
Geo., B. Ray et al.	.	.	1	1
W. G. Ray Drlg. Co. et al.	.	.	1	1
Republic Prod. Co.-Louis Hart	1	.	2	3
Republic Prod. Co.	.	1	1	2
Frank W. Roe	.	1	.	1
Robertson Drlg. Co.	.	.	1	1
Roeser-Pendleton, Inc.	.	.	2	2
Rusk County Oil Co.	.	.	1	1
Nat Sadler et al	.	.	1	1
T. G. Shaw Interests	.	1	.	1
Bert J. Shaw Oil Co. et al	.	.	2	2
Shell Pet. Corp.	1	.	.	1
Sinclair O&G Co.	.	.	2	2
H. R. Smith-Gulf Prod. Co.	.	2	2	4
Snetcher & Pitman	1	.	.	1
Stanolind O&G Co.	1	2	3	6
H. R. Smith-Houston Oil Co.	1	.	1	2
Snowden & McSweeney Co.	.	.	1	1
Southern Oil Co.	.	1	.	1
Stroube & Stroube	.	.	1	1
Sun Oil Co.	2	2	4	8
Suttle et al	.	1	.	1
Texas Inland O&G Co. (Merrick Drlg. Co.)	.	.	1	1
Texas Trading Co.	.	.	1	1
G. O. Thompson et al	.	1	1	2
Tidal Oil Co.	.	1	3	4
Tidal Oil Co.-W. M. Hobson	.	1	.	1
Tulsa Oil Co.	.	.	1	1
Turman Oil Co.	3	.	3	6
Turner & Swift	.	.	1	1
C. E. Upchurch & Allen	1	.	.	1
Graddy H. Vaughn et al	.	.	1	1
W. D. Walton et al	.	.	1	1
Ward Oil Corp.	.	.	2	2
Ward Oil Corp.-Elliott-Johnson	.	.	1	1
T. A. Warren et al	.	1	.	1
Weaver-Crim Corp.	.	.	3	3
Westexas Oil & Roy. Corp.	.	.	1	1
Westheimer-Daube-Cox & Hamon	.	.	2	2
Woodley Petroleum Co.	.	1	2	3
Total	32	79	203	314
Total Previous Week	29	99	186	314

GREGG COUNTY OPERATIONS:

Operator	Locations	Derricks & Rigs	Active Tests	Total
W. M. Angle & Brytex Oil Company	1	.	.	1
J. L. Anderson et al	1	.	.	1
Arkansas Fuel Oil Co.	3	.	.	3
Arkansas-Yount-Lee Oil Co.	.	.	2	2
P. P. Ash et al.	1	.	.	1
Badgett-Cooper Drl. Co.	1	.	1	2
Beeler & Beeler	.	1	.	1
H. L. Blackstock et al.	.	1	.	1
Blackwell O&G Co. (Mullendore & Berry)	1	.	.	1
Claude Bell & R. A. Graddy Inc.	.	.	1	1
Bridwell Oil Co.	.	.	1	1
Bert L. Brookins et al.	.	1	.	1
D. H. Byrd-Gulf-Humble et al	.	.	1	1
Capitol Prod. Co.	.	.	1	1
Earl P. Carley & Blair	.	.	1	1
Cranfill-Reynolds Co.	1	1	1	3
Joe Crump & Hanagan	.	1	.	1
Daisy Oil & Gas Co.	.	.	1	1
Danciger Oil & Refg. Co.	1	.	.	1
Davis & Russell	.	.	1	1
Daniel & Tom C. Patton	.	.	1	1
Tom David (was Leonard Pet. Co.)	.	1	.	1
Delaney & Randall	.	1	.	1
Joe DeGlazier (F&M Drl Co.)	.	.	1	1
Harry W. Elliott et al	.	1	1	2
E. E. Eslick & Little	.	.	2	2
F. H. E. Oil Company	.	.	1	1
Flanagan Prod. Co.	.	.	1	1
L. S. Flannery et al	.	.	1	1
R. L. Foree-Shasta Oil Co.	.	.	1	1

(Continued on page 80)

East Texas Company Will Tap More Than 10,000,000 Barrels

Eight Operations in East Texas Area

RUSK COUNTY OPERATIONS

EAST TEXAS HIGHLIGHTS

By H. H. KING
Staff Representative

Sun May Build Line

Sun Oil Company is contemplating construction of a direct pipe line from East Texas to connect with its gathering system in the Gulf Coast; but no definite action is to be taken on this project until the producing value of the company's large leasehold on the west side of the Kilgore and Joiner fields can be established. Sun Oil Company has a number of leases scattered over the proven sections of Rusk and Gregg Counties, and provisions have been made temporarily to service these properties with tank car shipments to the Gulf Coast. All matters pertaining to the proposed trunk line are being handled by the general offices of the company at Philadelphia.

Another East Texas Refinery

Invasion of the East Texas district by Bell Oil & Gas Company, Tulsa, with a 5000-barrel capacity refinery is in prospect, as officials of the company have completed a survey of the situation, and plan to make use of equipment recently obtained by the purchase of a skimming and cracking plant in Kansas. This concern is operating a plant in Oklahoma, and is associated with Danciger Oil & Refining Company in the operation of a plant at Pampa, Texas. Danciger Oil & Refining Company has completed several wells on its large group of leases in Gregg and Rusk Counties, but has deferred action in providing a market outlet for same.

Texas Pacific Plans Rack

Texas Pacific Coal & Oil Company, Fort Worth, contemplates the erection of a 10-car rack on the Texas & Pacific Railroad near Gladewater in order to provide a market outlet for oil expected from tests now being started by the company in Gregg County, and southeastern Upshur County. This company has a complete refinery at Fort Worth, and also a plant at Wynnewood, Oklahoma.

Atlas Completes Line

Welding work on Atlas Pipe Line Company's eight-inch trunk line system, which extends from tank farm and pump station site near Longview to Spartan Refining Company's 10,000-barrel skimming and cracking plant at Jewella, near Shreveport, was completed early this week. Work on this 57-mile line was started about April 1, and it is to have a capacity of about 18,000 barrels daily, with gathering lines extending to the Longview, Kilgore and Joiner fields. Atlas Pipe Line Company has been making heavy crude shipments from the Kilgore field over its rack at Footes, near Longview, while awaiting the completion of the direct carrier, which will also deliver crude into Arkansas through the old system of Shreveport-El Dorado Pipe Line Company, which has been succeeded by Atlas Pipe Line Company.

Humble Seeks Rate Reduction

Humble Pipe Line Company was preparing to make application for the permission of the Interstate Commerce Commission for a reduction in its interstae pipe line rates this week. No application had been made on Tuesday but officials of the company said that the application would be made during the week.

The reduction in rates for intrastate oil movement must be approved by the Texas Railroad Commission and the matter will likely come up at a meeting to be held in Austin June 11. This June 11 meeting is a postponement of the meeting originally called for May 8 to hear the application of Claude Wilde, president of Independent Petroleum Association of Texas for a 50 per cent reduction in pipe line rates.

Humble Pipe Line Company's proposed reduction will "average about 20 per cent" and will not by any means be a flat 20 per cent reduction. No other pipe line company, as far as can be learned, has followed the action of this company for a reduction of tariffs, but on the other hand it is possible that such reduction will be opposed.

Magnolia Building Tanks

Magnolia Pipe Line Company is to erect four 80,000-barrel steel tanks at its tank farm and pump station near Center, Shelby County, Texas, because of congestion arising from the movement of 30,000 barrels of East Texas crude through Center to the Gulf Coast. The tanks are to be moved from the company's large tank farm near Midland, West Texas district. Magnolia Pipe Line Company's East Texas 10-inch trunk line ties into the company's Arkansas-Beaumont eight-inch system at Center, and a bottleneck exists from the latter point of Beaumont, but will probably be eliminated shortly by installing loops and extra pumping units at the stations.

Simms Doubles Line

Simms Oil Company has constructed a second four-inch pipe line from its pump station on the G. B. Tenery farm, located east of the discovery well of the Longview field, to its 36-car rack on Texas & Pacific Railroad at Willow Springs. This new line parallels the original three-mile four-inch unit. Simms Oil Company has constructed a four-inch line from its Tenery station in a northwest direction to the Thadd Snoddy farm, W. H. Castlebury Survey, with six-inch line pipe used in building from the latter point to the Harley farm, located in northwestern part of the Wm. Robinson Survey, and four-inch pipe is used from the latter point in a northeast direction to connect with wells on the Maggie Magrill farm, D. Sanches Survey. Simms Oil Company has been handling considerable oil through this system on a common carrier basis at a tariff of five cents per barrel for gathering and loading oil aboard cars, and also takes care of all production from its jointly owned properties.

Illinois Building Storage

Erection of two 55,000-barrel steel tanks has been authorized by Illinois Pipe Line Company to serve as working tanks in conjunction with the operation of the company's 50-car rack, located on the Texas & Pacific Railroad at Camps, Gregg County. These tanks have been in service in Arkansas fields, and are being dismantled. Illinois Pipe Line Company is at work on a six-inch line that will extend from the above rack and tank farm site to the Kilgore field and intermediate points in order to take care of oil produced by Mid-Kansas Oil & Gas Company in northern Rusk and Gregg Counties. Illinois Pipe Line Company is also operating a 35-car capacity rack on the I. & G.-N. Railroad at Arp, Smith County, handling oil produced in the Joiner field by Mid-Kansas Oil & Gas Company, with current loadings being consigned to the Fort Worth refinery of Marathon Oil Company. All of the above companies are subsidiaries of Ohio Oil Company, Findlay, Ohio. H. D. McCracken, Fort Worth, division superintendent for Illinois Pipe Line Company, has been placed in charge of the latter's East Texas activities, which will also include considerable common carrier work, with a crude gathering and car loading tariff of 10 cents per barrel in effect.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Refugio Deep Wells to Stay On One-Quarter-Inch Chokes

San Antonio, Texas.—Refugio field's deep wells, including those producing from the 5200, 5700 and 6400-foot sands, are to remain on one-quarter-inch chokes, except in the cases of water encroachment or similar conditions. This was the general agreement of nearly 20 operators at a hearing before the Texas Railroad Commission here April 22, conducted by Leslie McKay.

The meeting was conducted for the purpose of discussing the reducing of gas wastage in this field, which has been a problem for months. On March 10, all of the wells producing in the deeper horizons were placed on small chokes and caused to produce at that rate for a certain period. The meeting here last week was to discuss the results of this experiment.

It was shown at the hearing that 19 wells on large chokes were making 173,000,000 cubic feet of gas daily along with 8400 barrels of oil. After the wells were placed on uniform one-fourth-inch chokes, the oil production was cut to 5400 barrels, but the gas wastage was cut to 79,000,000 cubic feet daily, the proportion very appreciable. Prior to the order on March 10, many of the wells were already flowing through small chokes, consequently were not affected by the commission's action.

It was, however, brought out at the meeting that a number of the wells showed increased salt water production as a result of the smaller chokes and in these cases increased chokes were necessary to prevent ruination of these tests. This, of course, was a more or less local condition, which operators readily agreed could be remedied.

The high gravity of gasoline wells presented a real problem, inasmuch as they make mostly gas. The gasoline produced in these wells is nothing more than a spray and the wells should be classed as gassers rather than oil producers. Several of these wells already have been shut in and it is possible that a move will be advanced to have the remainder closed down in an effort to reduce the gas wastage.

The committee in charge of the "proration" of the field, if it might be called that, consists of the same operators as were appointed at the meeting several months ago. They include B. M. Nowry, United Production Company; G. J. Turner, Phillips Petroleum Company; George E. Smith, Mission Drilling Company; J. B. Moncrief, proration umpire at Pettus. J. F. Fouch, of Corpus Christi, is the deputy oil and gas supervisor of the Texas Railroad Commission in that particular district.

The field continued to complete more producers during the week. Saxet Oil Company's Cable 3 is a pumper at 3698 feet, estimated at about 100 barrels. United Production Company's O'Brien 11 is flowing 300 barrels of oil through one-fourth-inch chokes on both the casing and tubing, showing 1750 pounds and 1950 pounds on each, respectively. Its depth is recorded as 6443 feet.

Houston Oil Company added several wells during the week, all of them being very small. The Doughty 1, block 23, is showing 2025 pounds pressure on a one-eighth-inch choke at 6403 feet and is spraying a quantity of gasoline. The same company's O'Brien 1 is spraying gasoline, showing 1950 pounds on a one-eighth-inch choke at 6411 feet. The Scott 1, block 92, is producing around 15 barrels of oil and a little mud at 3750 feet, the production being lifted by flowing gas into the hole. Through the same method, this company is obtaining around 10 barrels oil and about 50 barrels of salt water from its Wilson Heard 5, listed as 3688 feet deep.

Second Oil Producer Completed In Wildcta Area of Bee County

San Antonio, Texas.—After nine months of wildcatting in the vicinity of Grayburg Oil Company's A. J. Kimball 1, Stephin Winship Survey, Bee County, a second oil producer has been completed. It is Mineral Oil Company's (Mauldin and Fisher) A. J. Kimball 1, which is reported to have swabbed at the rate of 100 barrels of 35 gravity oil daily through the two-inch line. A gas lift is to be installed in effort to make the well flow.

Grayburg Oil Company drilled a well into a sand at 3545-55 feet last July, which showed up for several hundred barrels daily. The operators, however, attempted to work over the well in an effort to bring in greater production and salt water broke in. The salt water ruined the test and plugging was necessitated.

Other drillers went into the territory and a number of wells were sunk in an effort to establish the trend of commercial production, all resulting in salt water or dry holes. The Mineral well was then located 300 feet south and 21 degrees east of the Grayburg test. It is located 1250 feet from the north and 1000 feet from the west line of the tract and is in the Stephin Winship Survey. It is seven miles southwest of the Pettus townsite pool.

The well struck the sand at 3537-40 feet and on a drill stem test of 3½ minutes showed 175 pounds of gas with a trace of oil. The casing was set at 3535 feet and the well drilled to a total depth of 3544 feet.

The main Pettus pool, Bee County, recorded two new semi-wildcats during the week, both of which are of much interest to operators in the district. United Production company spudded in its Ray 38, which is located 900 feet east and 10 degrees south of Ray 35, which is now the farthest east producer in the field. It is in the T. Hanson Survey. Surface casing was set at 383 feet and the well has resumed drilling.

The other important test in the immediate vicinity of the field is the George Ray 1 of Davis and associates. The well

is located in the northeast corner of the Ray 39-acre tract and is just north of William F. Morgan's Ray 1, which was abandoned at 4500 feet after testing salt water in the Pettus sand at 3959 feet. The well is of particular importance inasmuch as it is about one-half mile south of J. S. Mauldin's Mauldin 1, just south of the southwest corner of the Pettus townsite. The Mauldin well recently showed 125 pounds pressure and little gasoline and mud at 3847-54 feet and is now preparing to set casing and complete. The Mauldin well created a great deal of excitement recently when its showing placed condemned area into possible production.

One producer was recorded in the field during the week when United Production Company's Ray 33, located midway between the discovery and townsite pools, came in for 325 barrels from the sand at 3989-99 feet.

Muckelroy Pool Leads Mirando District in Total Production

San Antonio, Texas.—Leading the entire Mirando district, the Muckelroy pool of Zapata County produced 98,783 barrels from its 129 wells during March. The Cuellar pool was second, producing 91,721 barrels from 58 wells. Both pools are considered extensions of the Lenning field.

Third place was won by the Schoolfield and O'Byrne field of Duval County with 46 wells running 66,549 barrels for March. Cole field of Webb County, with 66 wells, made a run of 38,622 barrels and held fourth place, while old Aviator field of Webb County, with 133 wells, held fifth place with runs of 24,902, and old Randado field of Jim Hogg County, with 147 wells, held sixth place with runs of 22,663 barrels. The other 12 fields of the district made runs from as high as 15,506 barrels from 44 wells in old Albercas field of Webb County, down to 227 barrels from the two wells in Alworth field of Zapata County.

From a total of 1013 producing oil wells in the Laredo district, composed of Webb, Zapata, Jim Hogg and Duval Counties, total monthly runs of 412,486 barrels during March. The grand total of the district since its discovery, in 1922, to the close of March, 1931, was 27,149,239.99 barrels.

San Antonio, Texas.—Two new wells are being started in the Saxet field in Nueces County. Saxet Oil Company has started drilling on its Dunn 8 in the Saxet field just west of Corpus Christi. It is down 300 feet. The well is located 1000 feet north and 500 feet west of the Dunn 7, one of the late producers in the field. Gulf Coast Oil Company is rigging up Maggie Harrell 1, in the Saxet district. The well is located 330 feet from the south and west lines of the M. J. Harrell tract in the G.C.&S.F. Survey, Section 311, Block 32.

San Antonio, Texas.—Slick Estate's Riedel 1, 1830 feet southwest of the Poetter 1, discovery well of the same operators in Goliad County, tested salt water in a sand at 4562-74 feet and has been abandoned. The well failed to show enough oil in the sand at 4230 feet to make a producer. This test is in the W. C. Brown Survey. Slick Estate's Poetter 1 and Allen 1 made good producers around 4200 feet recently. They are the only other tests drilled in that sector of Goliad County.

San Antonio Independents Name Officers, Directors

San Antonio, Texas.—New directors were added to the list of the San Antonio Independent Oil Men's Association at a meeting April 27.

The list of directors, in addition to the officers elected recently includes: O. W. Killam of Laredo; Hal C. Sevier of Corpus Christi; Clint Heard of Refugio; I. Keys of Corpus Christi; James Daugherty of Corpus Christi; Adjutant General W. W. Sterling of Austin; George A. Ray of Pettus; J. E. Walsh, Al Buchanan, Alexander Boynton and Nelson Lytle, all of San Antonio.

Officers of the association are: Harry Pennington, president; Claude Witherspoon, first vice-president; C. E. Stalker, second vice-president; R. F. Schoolfield, third vice-president; B. D. Stevenson, secretary; and F. M. Fraser, treasurer.

The association is affiliated with the Independent Petroleum Association of Texas with headquarters in Fort Worth.

Phillips Holders Re-elect All Officers and Directors

Bartlesville, Oklahoma.—All officials and directors of Phillips Petroleum Company were re-elected at the annual meeting of stockholders here April 21. A vote of confidence in the directorate was expressed through vote of the stockholders.

Directors are: H. M. Addinsell, New York; Clyde Alexander, vice-president; William N. Davis, vice-president, Bartlesville; Eugene E. Du Pont, Wilmington, Delaware; E. P. Earle, New York; H. W. Farnum, Chicago; R. H. Higgins, New York; R. H. Hudson, general counsel, Bartlesville; J. L. Johnston, New York; John H. Kane, executive vice-president; H. E. Koopman, vice-president, Bartlesville; Charles E. Kemp, St. Louis; E. E. Loomis, New York; Samuel McRoberts, New York; John Markle, New York; Frank Phillips, president, Bartlesville; John G. Phillips, chairman of the executive committee, Bartlesville; W. C. Smooth, Bartlesville; O. K. Wing, secretary-treasurer, Bartlesville.

The earnings statement for the company for the first quarter of 1931 is due to be made public this week.

San Antonio, Texas.—Cribbs & Davidson have set casing at 674 feet in Texas Gas Utilities Company's Pryor 5, about 12 miles southwest of Uvalde, in Zavalla County. Gas sand was topped at 674 feet. The well will be drilled in several days. The log of the well is said to be running about the same as in the Pryor 3 well which is making around 15,500,000 cubic feet of gas daily, and the drillers are hopeful of a large producer in Pryor 5. This well is in the Pryor field, which is supplying Uvalde and several Winter Garden towns with gas from four other shallow wells.

El Dorado, Ark.—Louisiana Oil Refining Corporation's wells in the Stephens district of South Arkansas have been taken over by O. F. Whittaker, who is operating them on a 75-25 per cent basis.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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Sulphur Dome Well Sets New Depth Record for Gulf Coast

Houston.—Union Sulphur Company had set a new record for deep drilling in the Gulf Coast area the first of this week when its Fee 762, on the southwest flank of Sulphur dome, Calcasieu Parish, Louisiana, was abandoned in salt at 9250 feet. This test, a workover, was originally completed for initial production of 830 barrels of 18 gravity oil at 4789 feet.

The record for Gulf Coast deep tests prior to the record made by this well, was held by Yount-Lee Oil Company's Houssiere Latrielle 9, Evangeline field, which was abandoned at 8900 feet the latter part of March, 1931.

Besides setting a new record for deep drilling, Fee 762 also has the distinction of having drilled farther into salt than any other known well. Top of the salt in this well was encountered at 5864 feet and the drilling continued in salt to the final depth of the well, a total of 3386 feet of salt. The previous record for the greatest depth drilled into salt was made by The Texas Company's Wheeler & Pickens 17 in the old Humble field in 1918 when that well hit top of the salt at 2340 feet and drilled into it a total of 3070 feet where the test was abandoned at 5410 feet. An interesting feature of the Union Sulphur Company's test is the fact that it was drilled without using special heavy rig or equipment. The drilling in the salt was said to have been relatively easy.

A few wells in California have been drilled below 9000 feet, and one well in the Big Lake field, Reagan County, West Texas, is producing oil and gas from depth of 8923 feet. That deep producer is Big Lake Oil Company's University 3-C. The deepest test ever drilled outside of the United States was Guerrero 3 of Compania Petrolera Tamaulipas on Guerrero dome, Tamaulipas, Northern Mexico. That well was recently abandoned at 7897 feet.

Well Completed at Barbers Hill Good for 1475 Barrels

Houston.—Humphreys Corporation registered the only producer for the past week at Barbers Hill when it completed Wilburn 2 for an initial of 1475 barrels. This well is located on the southeast flank of the field. The producer was brought in at total depth of 5234 feet after sidetracking screen at 5130 feet, where it had been delayed for over three weeks with a fishing job.

Another completion for the field was Yount-Lee Oil Company's Woodward 10, which was abandoned at 6484 feet in shale. An oil sand was cored into for a distance of 14 feet at 5471 feet but was passed up with the idea of picking up a more prolific sand at a lower level.

Indications point to the probable completion during the coming week of Yount-Lee Oil Company's Chambers County Agricultural Association 19, which is 68 feet in oil sand at 3760 feet. Casing has been set and the well is waiting on cement to set. Mills Bennett Production Company has set three joints of screen in Gulf Smith 1 at 5600 feet and will likely complete this well within the next few days.

Plan Second Location in Vidor Area, Orange County

Houston.—Further attempts of Gulf Production Company to locate production in the Vidor area, Orange County, will likely be made according to reports that a second location will be made shortly on the Spear prospect. This test will be operated jointly by Gulf Production Company and Vacuum Oil Company.

The Spear or Vidor area is a seismic prospect located in the Nancy Davis Survey, in the western part of the county. The first test drilled on the prospect, Gulf Production Company's Miller-Vidor 1, was abandoned the first of March, 1931, after it had been drilled to 6500 feet. No favorable shows were recorded.

The new test will be located a short distance from the old location and will probably be started soon after the first of May. Part of the equipment of the first test is still on the ground and will be used in drilling the new well.

Crews Oil Company's Mansfield 1, located in the J. W. Hill Survey, southeast of Beaumont, in Orange County, is washing to bottom at 1410 feet. Jefferson Production Company has spudded in its Bland 1 in the James Dyson Survey, near the discovery well in the Orange field, and plans to push operations until the well is finished.

Wildcat Test Near Lufkin Attracting Wide Interest

Houston.—Reported showings in R. D. Moore's Abney Estate 1, just outside the city limits of Lufkin, is attracting attention to the possibilities of finding production in Angelina County and will probably result in several locations being made in that vicinity. An oil show was reported at 1290 feet in the Abney Estate 1 and 6⅝-inch casing was set at that depth.

Pollock Oil Company's Sessions 1, located in the Jose de la Garza Survey, one-half mile from Cherokee County line, is drilling in sand at 2500 feet and has also reported an oil show. A location has been made on Cameron Lumber Company's tract by J. B. Douglas and others. This test is located about 11 miles northwest of Lufkin on a 4500-acre block held by the operators of well. Contract calls for the well to be drilled to a minimum depth of 4500 feet.

Houston, Texas.—Financial report of Humble Oil & Refining Company for the year ended December 31, 1931, shows net profits after all charges of $18,083,490.56, compared with $32,535,080.00 in 1929. Gross operating income for 1930 amounted to $161,563,841.52, while net operating income was $16,938,887.56. Non-operating income amounted to $3,785,025.90. Surplus, as of December 31, 1931, amounted to $96,432,161.46, against $87,482,967.93 on December 31, 1929. Current assets for 1930 were $97,272,120.66, against current liabilities of $17,279,350.47; showing a net working capital of $79,992,770.19.

Yount-Lee Gains Control of High Island Producing Area

Houston.—Two deals, one direct and another involving a two-way sale, culminated transactions whereby Yount-Lee Oil Company has gained virtually full control of the producing area at High Island, Galveston County. The purchase of the property in this area gives Yount-Lee Oil Company approximately 2200 acres covering the High Island dome and its flanks. Sun Oil Company retains holdings of 100 acres in the vicinity of the field.

The holdings of Marrs McLean were sold to Yount-Lee Oil Company for $200,000 cash, $400,000 payable over a period of a year, $2,000,000 in oil and one-eighth overriding royalty. The sale of the original holdings of Marrs McLean included 1400 acres, W. D. Gordon being associated with him in one 100-acre block. The McLean royalties includes: 2½ per cent from the landowner and 12½ per cent overriding or a total of 15 per cent on the Cade lease; six per cent on the Smith and Gulf lease; and one-twenty-fourth on Sun Oil Company's lease.

The second deal involved the purchase of Gulf Production Company's holdings by Marrs McLean. He paid Gulf Production Company $150,000 cash and $300,000 in oil for 300 acres in fee and 300 acres in leases. Gulf Production Company keeps a 6½ per cent overriding royalty on this property. There are seven producing wells on this acreage with a daily average production of 400 barrels. Mr. McLean last week sold the holdings he had purchased from Gulf Production Company to Yount-Lee Oil Company for $225,000 cash, $300,000 in oil that goes to Gulf Production Company and kept a six per cent overriding royalty. Although Mr. McLean is through so far as drilling is concerned in the field he still retains royalty on both Yount-Lee Oil Company's and Sun Oil Company's property that will average more than eight per cent.

New Producing Sand Uncovered At Lockport, Calcasieu Parish

Houston.—Union Sulphur Company opened a new pay sand in the Lockport field, Calcasieu Parish, Louisiana, last week when it completed Martha Moss 2 at 6529 feet for initial production of 2500 barrels 40 gravity pipe line oil daily through a three-eighths inch choke, pressure being 1100 pounds. Production is from 16 feet of sand. Casing was set at 6503 feet, and 26 feet of screen was set on bottom. The well was later pinched further, using one-quarter inch choke, after which it flowed at the rate of 1200 barrels daily.

This well is located 120 feet south and 56 feet west of the northeast corner of the southeast quarter of the northwest quarter of Section 8-10s-9w, on the west side of the field.

Completion of Martha Moss 2 not only marks the discovery of a new sand in the field but also gives the field a 1700-foot extension.

Tyler, Texas.—Field operations in Rusk and Gregg Counties started the present week off with a new peak in volume of activity, and consecutive gains have been recorded by these two counties since early February. Both counties were credited with a total of 450 operations at the start of the new week, as compared to 435 the previous week, even though 52 oil wells and two dry holes were completed during the seven-day period. Gregg County is contributing the greatest gains in field work.

▼ EAST TEXAS NOTES ▼

(*Continued from page 70*)

Gladewater section of Gregg County has taken place since Sinclair Oil & Gas Company's M. T. Cole 1, located near the center of Samuel Brooks Survey and south of the river, found the Woodbine structurally low. Cole 1 was drilled to 3661 feet, or 3329 feet below sea level. Only partial recovery was scored in coring the last 40 feet of hole, so little information was gained as to sand thickness. The well began flowing through rotary mud after drilling cement plug early this week, but production test was deferred until connections could be completed. This well is about 2½ miles southeast of Selby Oil & Gas Company's big producer on the Snavely farm, and the latter was drilled to 3583 feet, or 3310 feet below sea level, with first sand at 3529 feet. Sinclair Oil & Gas Company's Cole 1 was five degrees off vertical at 3538 feet, but with corrected depth it has proven to be lower.

Republic Production Company succeeded in developing a flow of 130 barrels of oil per hour through one-inch choke on casing from its Fisher-Rodden 1, a west offset to a producer in the vicinity of Camps, Gregg County, after logging only three feet of oil sand. This well passed through sand at 3452 feet into shale, which continued to 3502 feet. Georgetown lime was reported at 3502-17 feet.

Tyler, Texas.—Extending the Joiner field about 2½ miles south with an initial flow of 235 barrels clean oil per hour through tubing, Sinclair Oil & Gas Company's Jarvis 1 furnished a surprise completion early this week after drilling sand at 3698 to 3710 feet. This well is in Smith County, and was drilled 3321 feet below sea level. The same company's McRae 1, a wildcat located further south in Cherokee County, has been abandoned in water sand at 3976 feet, and its Wiley 1, located in Smith County and northwest of the nearest production, is plugging back after flowing 1000 barrels oil and considerable water from sand at 3853 feet, or 3326 feet below sea level.

Howard Petroleum Corporation's wildcat on the Hold land in eastern Smith County and west of the Kilgore field, cored water sand at 3920 feet and will be abandoned in the Gladwater section of Gregg County. Sinclair Oil & Gas Company's Cole 1 was flowing 250 barrels oil per hour with drill stem in the hole early this week. The latter was drilled to 3661 feet, and dangerously close to the water level.

Longview, Texas.—A group of operators in the Joiner or Henderson field, Rusk County, gave notice at the proration meeting here April 27 that they will resort to the courts in forestalling curtailment of their production in event the proration program shall interfere with fulfillment of contracts which they hold. These operators, Lide and others, controlling three producing companies, have production on leases out of the Calvin Young land, M. J. Pru Survey, and it was stated that each of the three companies has contracted with Atlas Pipe Line Company to deliver 2500 barrels of crude daily to the latter, the total amount of oil involved under the three contracts being reported as 1,000,000 barrels.

Louisiana--Arkansas Field Notes

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Arkansas Well Average 18.07 Barrels Daily

Shreveport—The daily average of 2000 wells in the three upper sands in the Smackover oil field of Arkansas, is 18.07 barrels each, according to the latest survey made of that field. This gives a combined daily average of approximately 36,000 barrels. The average daily yield of the 140 wells in the Champagnolle (Rainbow City) district of Union County is 44.74 barrels per well. Lisbon has a daily average of only 2.62 barrels for its 330 wells.

Smackover's 5000-foot test, Lion Oil & Refining Company and associates' Guy P. Hayes A-9, SW NE Section 4-16-15, Union County, has spudded and 12½-inch surface casing was cemented at 270 feet. Late last week the well was drilling shale and boulders at 1330 feet.

Ozark Natural Gas Company completed a 3,250,000 cubic foot shallow gasser at 1557 feet, 250 pounds rock pressure, in Sebastian County, Northwest Arkansas, during the past week in A. B. Bryant 1, Section 28-8n-30w.

J. W. Baxter, drilling a series of shallow tests in Madison County, Arkansas, abandoned two holes during the week, Hallem 2, center of Section 17-16-22, in shale at total depth of 405 feet and Hallem 3, NE SW Section 1-17-26, in clay and gumbo at 42 feet.

An outside test for the Mount Holly district of Ouachita County, Belmont and associates' Dean Estate 1, Section 16-15-17, was junked at 2907 feet in sandy shale. Red beds were topped at 2765 feet.

Two Arkansas locations were made during the past week. Kendall Oil Company is rigging up for Fullenwider & Kitchen 1, NE NE Section 13-17-22, Columbia County, and Marine Oil Company will attempt a slight eastern extension of the Urbana district, Union County, having rig up for P. Winn Estate A-2, NW NW Section 11-18-13. All producers so far in that area are in Section 10-18-13.

Test Upper Trinity Two Miles West of Bellevue

Shreveport.—The southwest flank of the shallow Bellevue structure in Bossier Parish, highest geological point on the Sabine Uplift, already being productive of oil and gas in the upper Trinity at 1700-1800 feet, Hankins and associates are scheduled to spud in this week for a test for the upper Trinity two miles east of Bellevue's Nacatosh producing field. The new test is Newell 1, NE NE Section 12-19-11. It is approximately three miles from the upper Trinity tests on the southwest flank of the structure. H. I. Morgan who has drilled the series of tests on the southwest flank started another operation during the past week in Kendricks A-13, Section 22-19-11, which had 10-inch casing cemented at 135 feet and late in the week was drilling at 420 feet.

Only two other new locations were made in North Louisiana during the week, both of the others being outside tests for Zwolle, Sabine Parish. Texas Company has derrick up and is moving in rig for Stille 3, SW SW section 33-8-11, a quarter of a mile northeast of Sabine Royalties Company, Incorporated's Bill Hill 1, NW NE NE Section 5-7-11, which is standing with 1900 feet of oil in the hole but refuses to flow and is being standardized at a depth of 2506 feet, Zwolle marl having been topped at 2217 feet. This well is between two dry holes and is a northeast edge test between two parts of the spotted southeast Zwolle field. The other Zwolle location is Houston-Sabine Production Company's Sabine 1, Section 36-8-12.

Shreveport, La.—The upper Trinity wet gas field near Rodessa, northwest Caddo Parish, was extended a mile southwest late Monday when United Gas Public Service Company's Fortner 1, NW NW Section 5-22-16, was completed at 5591 feet, making estimated thirty-two million cubic feet of gas of high gasoline content. No rock pressure was obtained. Half-mile north of nearest gasser in field, same company's Emmons 1, NE SW Section 27-26-16, was completed making an estimated five million cubic feet of wet gas at 5541 feet. It was being killed Tuesday and will be deepened. Counting Emmons 1, this gives the Rodessa field five gassers. This is deepest commerçial pay in North Louisiana. Fortner 1 is only 200 feet east of Texas line of Cass County.

Besides Jordan Drilling Company, Inc.'s Louisiana Long Leaf 1, Section 3-7-11, which was completed late the preceding week, and later was gauged flowing 300 barrels daily and linking up three separate offshoots of the southeast field, the south extension of the Zwolle east field added another producer during the past week in H. W. Perritt's Bowman-Hicks 3, Section 2-7-12, pumping 307 barrels daily from total depth of 2440 feet in chalk. Natural Gas Products Company, however, abandoned Sabine 2, Section 1-7 12, as a dry hole in the chalk at total depth of 2710 feet.

Shallow Horizon at Caddo Gets 150-Barrel Producer

Shreveport.—The shallow producing horizon of the Old Pine Island field of Caddo Parish, yielded a 150-barrel flowing well at 1600 feet in the chalk during the past week when Shreveport Oil Corporation completed Hicks 8, Section 32-21-15. This continues a perfect drilling record for this lease.

Testing of United Gas Public Service Company's Emmons 1, NE SW Section 27-23-16, Rodessa district, northwest Caddo Parish, where there are three wet gas producers producing in the upper Trinity, was delayed during the past week by a stuck drill stem but Saturday, April 25, tubing was being set in the hole, whose total depth is 5541 feet. This test is a half mile north of production; 6⅝-inch casing was cemented some time ago at 5396 feet. Southwest of production the same company's Fortner 1, Section 5-22-16, an old well being deepened from 5080 feet, on Saturday, April 25, was coring at 5586 feet.

Late last week Pelican Natural Gas Company's Cooper 1, Section 29-18-14, just northwest of Shreveport's municipal limits, and designed for a 5500-foot test, was drilling shale at 1450 feet.

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Jackson Gas Field Adds Large Well During Week

Jackson, Miss.—The southeast part of the Jackson gas field in Rankin County, Mississippi, added another gas producer during the week ending April 25, Hester and associates' Ellis 1, NE SW Section 12-5-1e, being completed at 2398 feet, elevation being 270 feet, making an estimated gas yield of 35,000,000 feet daily. Black shale was topped at 2299 feet and the Midway chalk was topped at 2390 feet.

Millstein Oil and Gas Company, which has been shut down for several months in an eastern outside test in Rankin County, Gammill-Hartfield 1, SW SE Section 6-5-2e, is arranging to abandon the test. This well as fast as it was bailed down filled up with salt water and a little of the usual low grade oil found in several Jackson tests. Total depth is 2500 feet, elevation being 273 feet. Black shale was topped at 2409 feet and chalk at 2496 feet.

Carter Oil Company and associates, who recently abandoned Dubard 1, Section 18-22-4e, Grenada County, North Central Mississippi, at 4012 feet, after getting several gas shows, is building derrick for Dubard 2 in the same section. This was Mississippi's only new location during the past week. Gulf Refining Company has taken over Mississippi Gulf Oil and Gas Company's Pope 1, NW NE Section 35-8n-16w, Covington County, South Central Mississippi, which was recently temporarily abandoned in sandy shale at 3000 feet, probably still Wilcox, which formation had been topped at 2100 feet. The test is expected to de deepened. Gulf Refining Company's Box 1, NW SE Section 11-2n-15e, Clarke County, East Central Mississippi, late last week was coring gray sandy shale at 4185 feet, after reaching base of Selma chalk at 3703 feet, elevation 221 feet.

In Decator, South Tennessee, Chester County Oil and Gas Company's Montgomery 1 late last week was drilling at 2141 feet in gray lime.

Government's North Dome Oil Again on the Market

Los Angeles.—The federal government's royalty oil from the North Dome of Kettleman Hills, again is on the market. Bids were asked April 23 for both oil and wet gas which accrues to the government from contracts for production on the dome, which now amounts to about 290 barrels daily, royalty on 3300 barrels which is all that the two flowing wells operating under unit operation, may now produce.

Existing contracts expire July 1 under which the government is receiving $2.57 a barrel for oil of the type that now sells for 35 cents. The contractors have asked to be relieved; but Secretary of Interior Wilbur has no authority to suspend the contract.

New bids will be on a premium basis, with the prices obtained by the Kettleman Hills North Dome Association as the base. If the price at the time of making the contract were 60 cents, and the price of oil were to rise in the meantime, the figure for government royalty oil would ascend accordingly.

The 1932 annual meeting of the Independent Petroleum Association of America will be held in Wichita, Kansas. The decision to meet there next year was made by directors of the organization, who met following the annual meeting in Tulsa, April 24.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
The Texas Co., Eaves 6, ne sw sw 24-1s-3w	300	2385
CLEVELAND COUNTY—		
Continental Oil Co., Sudik 5, sw nw ne 6-10-2w	450	6485
CREEK COUNTY—		
Gled Oil Co., Travis 2, c se ne 13-19-8e	115	2108
Murta et al, Wilson 4, nw se nw 32-17-12e	240	2390
J. H. Wright Estate, McKellop 1a (owd) se ne sw 23-17-10e	*	3294
JEFFERSON COUNTY—		
McGinley & Sigler, Marshall 1, se ne se 8-7s-5w	*	2272
MUSKOGEE COUNTY—		
Mazda Oil Co., Ingram 1, (owd) nw c ne se 9-15-18e	35	1004
OKLAHOMA COUNTY—		
I.T.I.O., Cromwell-Franklin Oil et al, Billen 1, ne se ne 26-11-3w 8 hrs	1680	6218
Anderson-Pritchard & Phillips Pet., Wilhoit 1, nw c se nw ne 10-11-3w (4 hrs)	5700	6290
Phillips Petroleum, Kleinegger 1, ne se ne 10-11-3w 8 hrs	13445	6272
Oils Incorporated, Hathaway 1, sw c se sw nw 2-11-3w, 4 hrs	9195	6230
Thomas B. Slick Estate and W. H. Atkinson, Townsend 2, ne se nw 1-11-3w	*	6549
OKMULGEE COUNTY—		
Texas Co., Meyers 1, cwl sw ne 35-16-11e	35	1788
Jordan et al, Anderson 1, sw c se ne 28-12-14e	¶¼	560
PITTSBURG COUNTY—		
Utilities Producing Co., Cotcher 1, sw c 9-7-18e	¶4½	1739
Peerine et al, Ringland 1, nw c ne 7-6-15e	*	1505
SEMINOLE COUNTY—		
Gypsy Oil Co., Coker 1, sw c ne 2-8-5e	930	4213
Carter Oil Co., Rogers 5, nw c se 2-8-5e	580	4193
Mid-Continent Pet. Corp., Tommy 1, se ne ne 25-8-7	*	3344
Magnolia Pet. Co., Hyde-Swan 2, nw sw se 29-6-6e	*	2910
TEXAS COUNTY—		
Argus Production Co., Kenny 1, c sw 36-5-14e c.m.	¶5½	2790
TULSA COUNTY—		
Galt-Brown, McKay 1a, se c nw sw 32-19-11e	*	2602
WAGONER COUNTY—		
E. C. Peebles et al, Chissoe 1, ne c 34-17-15e	*	1050

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Magnolia Pet. Co., Koogler 65, se sw nw 21-26-5e	50	2474
ELLSWORTH COUNTY—		
J. A. Aylward et al, Stratman 1, se nw se 1-17-10w	115	3255
GREENWOOD COUNTY—		
Braden et al, Souder 1, sw ne se 13-23-12e	*	1715
McPHERSON COUNTY—		
McPherson O&G Devel. and Shell, Decker B 2, c ne 11-19-2w	¶38	2895
W. C. McBride, Inc., Gustafson 1, c nw nw 12-19-2w 12 hrs	510	2929
Lario O&G and Shell, Sellers 1, sw c ne 31-19-1w	¶21¼	2938
MORTON COUNTY—		
Sidwell & Kuhns, Ferguson 1, c se 9-34-39w	¶10½	2615
SEDGWICK COUNTY—		
Magnolia Pet. Co., Wheeler 4, ne c nw se ne 19-27-2e	700	2943
STEVENS COUNTY—		
Texas Interstate Pipe Line Co., Phillips 1, c nw 1-34-38w	¶10	2610

For Tabulation and Comparsion See Market Section

EASTERN STATES

PENNSLYVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
E. C. Tanner, Griffith 1	10	....
Ball & Ryan, O'Neil 1	4	....
Cora M. Simon, Corwin 21	2	....
T. P. Mullhamp, Quintruple 11	2	....
BUTLER COUNTY—		
Ruby & Ingold, Hockenberry 20	*	....
CLARION-VENANGO COUNTIES—		
W. H. Martin & Co. Tye 1	2	....
C. C. Barris, Barris 8	2	....
Rice & Thompson, Rice 1	*	....
TIOGA COUNTY—		
Home Gas Co., Fee 2	*	....
Stone Oil & Gas Co., Gordon 1	¶3	....
Iroquois Gas Co., Fee 1	¶1½	....

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
WAYNE FIELD—		
Cunningham Oil Co., Eveland 1	¶9	1728

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
CALHOUN COUNTY—		
Mid-Pen Oil Co., Poling 1	¶¼	2278
Park Bowser, Jackson 2	¶1½	1847
United Fuel Gas Co., Shroyer 1	¶½	1780
CABELL COUNTY—		
W. H. Kirtley & Co., Sunderland 1	¶¼	2149
FAYETTE COUNTY—		
Godfrey L. Cabot Inc., Huddleston 1	*	2220
LINCOLN COUNTY—		
E. R. Cameron, Beedlove 1	¶½	....
PLEASANTS COUNTY—		
Albert Neely, Morris 1	¶¼	....
Dinsmore & Co., Boley Hrs. 6	*	....
TYLER COUNTY—		
Union Gasoline & Oil Corp., Lemasters 1	¶¼	3129
WOOD COUNTY—		
G. W. Grant & Co., Henrie 7	2	....
WETZEL COUNTY—		
Manufacturers Light & Heat Co., Bartring 3478	¶¼	2244

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
MONROE COUNTY—		
Local Oil Co., Danford 3	*	1790
Gold Crown Oil & Gas Co., Edington 1	¶¼	1409
WASHINGTON COUNTY—		
Massilon-Macksburg Oil Co., Dutton Hrs. 5	2	330
Greenland Bros., Hutchins 6	2	391
Barnett & Co., Perdew 6	¶1	1638

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS COUNTY—		
Porter Bros., Hocking-Athens Coal Land 10	2	3374
STARK COUNTY—		
Medford Oil & Gas Co., Easterday 1	¶2½	4275
MUSKINGUM COUNTY—		
Ohio Fuel Gas Co., Frick 1	¶¼	4140
WAYNE COUNTY—		
Hulse & Kundtz & Hulse, Myers & Horn 1	*	....

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
VANDEBURG COUNTY—		
Vandeburg Oil Co., Hornby 3	10	995
SULLIVAN COUNTY—		
W. Conley & Co., Walters 1	*	825
PIKE COUNTY—		
Chas. £. Taliaferro Jr., Lamb 1	*	1223

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
WEBSTER COUNTY—		
Christian & Schmitt, Walker 4	5	....
OHIO COUNTY—		
F. M. & J. M. Meredith, Fuqua 7	5	725
MUHLENBERG COUNTY—		
H. & K. Producers Co., Rose 1	*	1610

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
WASHTENAW COUNTY—		
Ernest W. Bodine, Bodine 1	¶¼	63½
MONROE COUNTY—		
P. Barnes, Barnes 1	¶¼	72
Leonard Federer, Federer 1	¶¼	67

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
Richfield Oil Co., U. P. 7	135	7495
Cherokee Oil Co., No. 1	50	7655
NEWHALL—		
York & Smullin, Clampitt 6	60	2045
PLAYA DEL REY—		
Donley & McKeon, Del Rey 2	600	6220
West Coast Pet. Comp., Thurlow 2	140	4410
VENTURA AVENUE—		
Associated Oil Co., Lloyd 40	2600	7485

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
RANKIN COUNTY (Jackson)—		
Hester et al, Ellis 1, 12-5-1e	¶35	2398

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
CADDO PARISH (Pine Island)—		
Shreveport Oil Corp., Hicks 8, 32-21-15	150	1600
RICHLAND PARISH—		
Ark. La. P. L. Co., Thomason C-3, 21-16-6e	¶30	2462

LOUISIANA GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
LAKE BARRE—		
The Texas Co., Lake Barre 8	*	6790
LOCKPORT—		
Union Sulphur Co., Martha Moss 2	2500	6529
PORT BARRE—		
The Texas Co., Botney Bay Lbr. Co. 9	350	3399
VERNON PARISH—		
Weir & Smith, Delta Land & Lbr. Co. 1	*	4580

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Humphreys Corporation, Wilburn 2	1475	5234
Yount-Lee Oil Co., Woodward 10	*	6484
CLAY CREEK—		
Sun Oil Co., Clay 5	850	1746
DAMON MOUND—		
Layne et al, Wisdom 7-A	900	3708
HUMBLE—		
Sun Oil Co., Beck 1	*	5516
MOSS BLUFF—		
Humble O&R Co., Breeden 2	*	6571

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Hunter Oil Corp., B. E. Cooper 1	*	1399
F. P. Hynes et al, Richardson 3	35	1174
E. J. Stump & Co., L. F. Wilson 2-B	25	1532
COOKE COUNTY—		
Benson & Benson, Rhomer 1	*	1024
Ed. Ruwalt et al, Fette 1	*	2003
DENTON COUNTY—		
Pilot Point & Jacobs Synd., Jacobs 1	*	1560
WICHITA COUNTY—		
Hunter Oil Corp., American Refinery fee 6	*	1261
E. J. Stump & Co., Barton 1	35	1746
NORTH YOUNG COUNTY—		
Ard & Gilliam, Jeffery 1	*	900
W. E. Bernhard et al, Belknap 1-B	*	516
Bolin & Lindsey, Wolff 9	45	888
McClung & Dawson, Price 1	*	712
Jas. McKanna & Texas Co., Jeffery 2-A	300	728
Parkham & Ard, Belknap 1	*	773
SOUTH YOUNG COUNTY—		
Hynds et al, Criswell 3	*	3036
T. E. Roupe et al, Jordan 1	*	700
R. H. Simpson et al, Morris 1	*	1008

(Continued on page 82)

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER FIELD—		
W. D. "Andy" Anderson et al, Thrash 2	2500	3761
Giles 1	10,000	3745
C. P. Oil Co. (Roy I. Carter), Thrash 2	7500	3753
Frank R. Foster-Deep Rock Oil Co., Holland 1	700	3762
Humble O&R Co., Kangerga 1	5000	3759
Pete Lively et al, Cox 1	7500	3765
Alfred McMillan et al, D. Blackwell 1	10,000	3697
C. L. McMahon et al, Finney 1	2500	3644
Moody-Seagraves Prod. Co., Giles 1	4500	3683
Toliver 2	10,000	3727
H. S. Moss et al, Deason 1	3300	3736
Olsan Bros. et al, J. T. Brown 3	2500	3775
Petroleum Mkt. Corp., J. E. Arnold 1-A	1200	3718
Peery-Woody & C. W. Boller, Thrash 3	5000	3665
Turman Oil Co., Deason 5	3000	3721
Pilot Oil Co., Finney 2	750	3689
KILGORE FIELD—		
British-American Oil Co., Thompson 2	10,000	3675
Thompson 3	12,000	3675
Cordova Union Oil Corp. et al, Christian 2	5500	3682
Christian 4	10,000	3710
Gulf Prod. Co., C. M. Griffin 3	8000	3697
Heep Oil Corp. et al, Barber 1	10,000	3553
Horseshoe Synd. et al, W. P. Brightwell 1	15,000	3739
Houston Oil Co., W. P. Brightwell 1	10,000	3640
L. D. Crim 2	10,000	3767
Humble O&R Co., L. D. Crim 13	5000	3725
L. D. Crim 14	3000	3713
L. D. Crim 16	7500	3642
Ed. M. Jones-Houston Oil Co., Crim 3	7000	3699
Magnolia Pet. Co., Ben Laird 2	16,000	3604
Moody-Seagraves Prod. Co., Thompson 1	12,000	3776
Oriental Oil Co., Johnson-Alexander 1	8000	3542
J. S. Rushing et al, Geo. Thompson 1	15,000	3690
H. R. Smith-Gulf Prod. Co., D. M. Peterson 2	8000	3709
H. R. Smith-Houston Oil Co., D. M. Peterson 3	6000	3710
Shell Pet. Corp., Darcus Wills 1	7500	3661
Snowden & McSweeny Co., Laird 2	10,000	3642
Tidal Oil Co., Bean 1	15,000	3635
Turman Oil Co., W. P. Brightwell 1-B	15,000	3655
J. Z. Werby & McMinn, S. King 1	10,000	3626
Woodley Pet. Co., D. M. Peterson 2	12,000	3690
LONGVIEW FIELD—		
Arkansas Fuel Oil Co., W. L. Hestland 1	7500	3618
Blackwell O&G Co. (Mullendore et al), Magrill 1	8500	3674
Joe Crump & Hanagan, Caldwell-Nettleton 1	2500	3564
Danciger O&R Co., C. C. Clemmons 1	12,000	3614
Alfred McMillan et al, J. R. Fenton 1	3000	3615
H. S. Moss et al, Tenery 1	5000	3586
Magnolia Pet. Co., B. E. Rodden 5	16,000	3616
Republic Prod. Co., Fisher 1	3500	3517
W. L. Wollett et al, Harley 1	7500	3578
Yount-Lee Oil Co., F. K. Lathrop 1-B	7500	3587
F. K. Lathrope 2-B	10,000	3610
VAN FIELD—		
Pure Oil Co., A. G. Maxfield 3	500	2978
Mary P. Neill (100-ac) 4	2000	2962
M. F. Shirley (38-ac) 4	5000	2956
J. C. Stewart (16-ac) 3	4000	2936

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Texas Interstate P. L. Co., Burnett 1, Sec. 86	¶43	2339
Burnett 1, Sec. 108	¶15	2514
GRAY COUNTY—		
Beck et al, Sullivan 1	¶8-75	3058
Operators Roy. & Prod. Co., Harrah 8	400	3216
H. H. Sanders et al, Sullivan 1	¶3-25	3265
Sullivan 2	¶8-40	3351
The Texas Co., Webb 1	55	2798
HALL COUNTY—		
McAuley et al, Cliff 1	*	650
HUTCHINSON COUNTY—		
Dixon Creek O&R Co., Johnson 1-F	¶20-10	3127
Liner Drilling Co., Johnson 2	¶42	3012
Prairie O&G Co., Johnson 69-A	¶8-2	3085
Stanolind O&G Co., J. R. Barnhill 1	¶4	3498
Ware 3-B	350	3100
Texilvania Oil Co., Harvey 1	25	3092
MOORE COUNTY—		
Continental Oil Co., Brown 1	¶13¾	3655
Jim Cloud & Dana O&G Co., Utey 1	¶2½-60	3526
Plains Holding Co., Bridges 1	¶6	3420
WHEELER COUNTY—		
Murchison-Fain-McGaha, O. Close 1	¶39	1822

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ANDREWS COUNTY—		
Deep Rock Oil Co. et al, Kuykendall 1	50	4565
IRION COUNTY—		
Perry-Fox et al, Nutt 1	*	1490
JONES COUNTY—		
Al Kruger-Ungren & Frazier, King 1	600	2006
PECOS COUNTY—		
Corvette Oil Corp., Monroe 2	400	474
WARD COUNTY—		
Rickford & Fugler, Boogher 1	50	2240

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BASTROP COUNTY—		
Turner, Wharton & Anderson et al's J. E. Harris	*	2348
BEE COUNTY—		
Mineral Oil Co.'s Kimball 1	105	3544
United Prod. Co.'s Ray 33	325	3999
BROOKS COUNTY—		
Houston Oil Co.'s Wormser-Holbein 3	*	4904
GOLIAD COUNTY—		
Slick Estate's Riedel 1	*	4574
GONZALES COUNTY—		
Linden Pet. Co.'s Cowley 1	*	4915
KARNES COUNTY—		
Karnes County Dev. Co.'s Hubbard	*	3010
LIVE OAK COUNTY—		
Houston Oil Co.'s Parr 1-A	*	2800
McMULLEN COUNTY—		
Nuehaus & Stanolind O&G Co.'s Massey 1	*	4041
REFUGIO COUNTY—		
Houston Oil Co.'s Daughty 1, blk 23	25	6403
O'Brien 1	35	6411
Scott 1, blk 92	15	3750
Wilson Heard 5	10	3688
Saxet Oil Co.'s Cable 3	100	3698
United Prod. Co.'s O'Brien 11	300	6443
STARR COUNTY—		
Willow O&G Co.'s Kelsey-Bass 1	*	520
VICTORIA COUNTY—		
United Prod. Co.'s McFadden 1-B	*	3893
WEBB COUNTY—		
Geo. S. Marshall's C. W. Webster 3	75	2655
ZAPATA COUNTY—		
P. H. Meyers' I. G. Trevino 1	*	1914
O. & A. Co.'s Garcia 3	100	1229

NEW MEXICO

Company, Well and Location	Initial Production Bbls.	Depth
LEA COUNTY—		
The Texas Co.-Western Drlg. & Eng. Co., Bridges-State 1-D	*	5083

Field Operations in New East Texas Area

(Continued from page 71)

Operator	Locations	Derricks & Rigs	Active Tests	Total
Frank Foster-East Texas Refg. Co.	.	1	.	1
Frank Foster & Rhodes	.	1	.	1
A. N. Gibson & Adams	1	.	1	2
Gulf Prod. Co.	.	5	.	5
Harper Pet. Synd.	1	.	.	1
Heep Oil Corp., Houston Oil Co.	.	1	.	1
Herden & Woodward	.	1	.	1
Ed. B. Hopkins & A. R. Byrd, Jr.	.	.	1	1
Houston Oil Co.	.	1	.	1
Pat Hudson & Geo. McCamey	.	.	1	1
Humble Oil & Refg. Co.	.	3	1	4
S. F. Hurlburt & Brown	.	.	1	1
Hunter-Rowe et al	.	.	1	1
R. A. Irwin et al	1	.	.	1
C. C. Julian Oil & Royalty Co.	.	.	1	1
Kilgore-Central Oil Co.	.	1	.	1
H. P. Key et al	.	.	1	1
Kinsey & Trimble	.	1	.	1
J. K. Livingston et al	1	.	.	1
Marlan Oil Synd.	.	.	1	1
D. Manziel & S. S. Kouri	1	.	.	1
Mazda Oil Corporation	.	.	1	1
Mid-Kansas O&G Co.	3	1	3	7
Magnolia Pet. Co.	.	1	1	2
Meek & King	.	1	.	1
K. E. Merren et al	.	1	.	1
Norton & Holmes	.	1	.	1
A. G. Oliphant et al	.	.	1	1
John W. Olvey et al	.	.	1	1
Oriental Oil Co.	1	.	.	1
Pace et al	.	1	.	1
Pace Pet. Corp.	.	1	.	1
A. W. Phillips Oil Operators	.	.	1	1
Primrose Ref. Co., Penn-Worth Oil Prod. Co.	.	.	1	1
Pilot Oil Co.	.	1	.	1
Refugio Oil Corp.	1	.	.	1
Republic Prod. Co.	1	.	2	3
C. Rosenfield (Rose Oil Corp.)	.	.	1	1
Roeser & Pendleton, Inc. et al	.	1	.	1
Robert et al	.	1	.	1
Ross et al	.	1	.	1
Jim Rush (Trinity Drl. Co.)	.	.	1	1
Sabine Oil & Dev. Co.	.	1	.	1
Selby Oil & Gas Co.	.	1	.	1
Shell Pet. Corp.	.	.	2	2
Eddie Showers & W. A. Moncrief	.	1	.	1
Sinclair Oil & Gas Co.	.	.	1	1
Skipper Oil Co. & Lacey	.	.	1	1
Skipper-Tippett & Hall	1	.	.	1
J. R. Smith et al	.	1	.	1
E. L. Smith Oil Co.	1	.	.	1
Stanolind O&G-Simms Oil Co.	.	2	1	3
Sun Oil Co.	.	1	.	1
Sutton & Daniels	.	1	1	2
Sultan Oil Co.	.	1	.	1
Sutton et al	.	.	1	1
Texas Pacific Coal & Oil Co	.	1	.	1
Texas Unity Oil Co.	2	1	1	4
C. S. Thomas et al	.	1	.	1
Thompson et al	.	1	.	1
Sam K. Vierson et al	.	.	1	1
Paul Vitek et al	.	.	1	1
W. N. Wages et al	.	1	.	1
Wainwright-West Oils, Ltd.	.	.	1	1
R. B. Whittle & Claude Kavenaugh No. 2, Inc.	.	.	1	1
J. A. Wier, et al	.	.	1	1
K. Z. Werby & McMinn et al	.	1	.	1
Wise & Jackson	1	.	1	2
Woodley Pet. Co.	.	1	.	1
Yount-Lee Oil Co.	1	4	.	5
Total	24	56	56	136
Total Previous Week	20	56	45	121
Total Both Counties	56	135	259	450
Total Previous Week—Both Counties	49	155	231	435

Permits Granted for New Wells

▼ ▼ ▼

CALIFORNIA

ALMEDA COUNTY—Hayward Oil Co., No. 1, 29-3-1.

LONG BEACH—Chicksan Oil Co., Wolter 2, 13-4-13.

RINCON—General Pet. Corp., Ferguson 3, 8-3-24.

SANTA BARBARA COUNTY—W. Ernest Smith, No. 1, 18-7-34.

TULARE COUNTY—I. H. Larson, M. U. Stanford & L. L. Ellis, No. 1, 20-24-23.

KANSAS

McPHERSON COUNTY — Emrick et al's Sevetor 1, nw se se 9-19-2w; McPherson O&G Development Co. and Shell Pet., Corp., Decker 3, c se ne 11-19-2w; McPherson O&G Development Co., and Shell Pet. Corp., Meyer 2, c nw se 14-19-2w; Shell Pet. Corporation and Olson Drlg. Co., Johnson 2, se sw ne 36-19-2w; C. B. Davis, Ritz 2, sw se sw 19-19-1w; Plains Oil Co., Shell Pet., et al, Unruh 2, sw nw ne, 6-20-1w; Plains Oil Co., Shell, et al, Unruh 1, nw c ne 6-20-1w.

LOUISIANA

SABINE PARISH — Hawkins & Antoon, Natchitoches, La., Moran 1, 1-7n-11w, 251 ft s and 200 ft e of nw cor se¼ of ne¼.

BEAUREGARD PARISH — Beauregard Gas & Oil Co., Lake Charles, La., Cochran 1, 34-4s-12w, 400 ft s and 700 ft w of ne cor of sec.

CADDO PARISH—J. T. McCormick, Shreveport, La., C. B. Christian 1, 27-21n-15w, 830 ft s and 300 ft w of ne cor of sw¼.

CALCASIEU PARISH — Freeport Sulphur Co., Freeport, Vinton Dome 4, 4-11s-12w, 1880 ft s and 1630 ft e of nw cor of sec.; Vinton Dome 5, 4-11s-12w, 1550 ft w and 880 ft s of ne cor of sec.

SABINE PARISH — Houston Sabine Prod. Co., Zwolle, La., Sabine Lbr. Co. 1, 36-8n-12w, 450 ft n and 450 ft e of sw cor of sec.

OKLAHOMA

CARTER COUNTY—Carter Oil Co., Taylor 1, sw nw nw 19-1s-2w.

CREEK COUNTY—Evans, Lair et al, Nantz 1, ne c nw sw 30-19-9e; Murta, Sherry and Carter Oil Co., Wilson 1 "C", se c ne nw 32-17-12e.

GARVIN COUNTY—H. T. Skinner et al, Elred 1, sw c 13-2n-3e.

HASKELL COUNTY—Enterprise Gas Co., Green 1, c sw nw 9-9-18e.

LINCOLN COUNTY — Thomas B. Slick Estate, Fee 4, ne se sw 7-14-4e; Thomas B. Slick Estate, Fee 3, se ne sw 7-14-4e.

MUSKOGEE COUNTY—H. E. Dowd et al, Hembree 1, c nw ne 23-10-19e.

OKLAHOMA COUNTY — American Oil & Refg. Co., Washington 1, cwl sw nw sw 35-12-3w; I.T.I.O. Stevens 1, ne c nw sw se 15-11-3w; Thomas B. Slick Estate, Burroughs 2, nw ne nw 10-11-3w; Wilcox and Daffie, Daffie 1, sw c ne sw nw 3-11-3w; Phillips Pet., Reserve 1, nw c ne 3-11-3w.

OKMULGEE COUNTY—W. L. Barner et al, Butler 1, nw c se se 16-12-14e; Jordan et al, Anderson 2, sw c ne ne 28-12-14e.

PITTSBURG COUNTY—Choctaw Gas Co., Levier 1, ne se ne 8-7-18e; Utilities Producing Co., Carney 3, cnl ne nw 9-7-18e.

SEMINOLE COUNTY—R. H. Pierce et al, Halsey 1, nw c ne 17-9-6e; Empire O&G, Brown 3, nw ne se 3-8-5e; Amerada Pet. Corp., Tiger 1, ne nw se 3-8-5e; Amerada Pet. Corp., Tiger 2, se sw ne 3-8-5e.

TEXAS COUNTY—Western Producing Co., Cable Brothers 1, c ne 24-4-13e.cm.

TEXAS

ARCHER COUNTY — Dr. C. W. Wallace, Wichita Falls, Fee, 167, 22, No. 1, S. P. Ry. sur, 833 ft from n and 1823 ft from w line.

For Tabulation and Comparsion See Market Section

ANDERSON COUNTY—Humble O&R Co., Houston, W. L. Cook, 97, 1, A. B. Patton sur, 150 ft from n and w lines of sur. Riango Pet. Co., Dallas, J. M. Lynn, 300, 1, R. Brown sur, nw corner.

BEXAR COUNTY—Swearingen Oil Co., San Antonio, A. J. Swearingen, 100, 10, No. 52 sur, 300 ft n of No. 9. Patton & Yocum, San Antonio, T. Strunk, 139, 5, J. Montez sur, 150 ft from e and 1351 ft from s line.

BROWN COUNTY — Holloway & Bonwell, Zephyr, Baker. 80, 1, S 360, Brown sur, 420 ft from n and 309 ft from w line. Humble O&R Co., Cisco, E. P. Kilgore, A, 200, 3, No. 153, N. B. Mitchell sur, 1386 ft from n and 2144 ft from e line sur.

CALLAHAN COUNTY — Perry & Guffy Baird, Finley, 80, 3, S 75, Bayland Asy. sur, 150 ft from s and e line ne¼ ne¼.

CALDWELL COUNTY—R. R. Ogden, Austin, O. S. Alexander, 208, 2, S. Spillers sur, 1300 ft from n and 150 ft from e line.

CHAMBERS COUNTY—Humphreys Corp., Houston, A. A. Davis 1, H. Griffith sur, 475 ft from n and 71 ft from e line.

CHEROKEE COUNTY—Rowan & Nichols Oil Co., Tyler, C. S. Ousley, 160, 1, M. C. Lomax sur, 550 ft from n and 1530 ft from e line. H. M. Jones, Fort Worth, T. McLee, 1, Jas. McKnight sur, 300 ft from n and 1600 ft from e line.

COLEMAN COUNTY—Arcadia Refg. Co., Coleman, Wm. Burkett, B, 8, 1B, S 1, E. M. Justice sur, 150 ft from s and e lines. Prairie O&G Co., Ranger, B. W. Webb, 1, H. Odle sur, 150 ft from s and 577 ft from e line. J. E. Bedingfield, Cross Plains, R. M. Connelly, 88, 2, B 29, CCSL sur, 150 ft from n and e lines. Brown & Ekholm, Coleman, B. Barton, 234, 1, S 279, W. Farris sur, 150 ft from n and 2640 ft from w line. Hampton & Carter, Santa Anna, H. W. Kingsley, 120, 1B, J. A. H. Cleveland sur, 150 ft from n and e lines. Jamison, Pollard & Forster, Coleman, W. H. Golson, 2, 1, B 164, I. Harris sur, center.

FORT BEND COUNTY — Cullen & West, Houston, H. P. Lockwood, 126, 9, J. Rabb sur, west central part of lease.

GREGG COUNTY—Meek & King, Marshall, Harmony School, 3, 1, M. Irwin sur, 150 ft from n and w lines. Gulf Prod. Co., Houston, F. Birdsong, 74, 2, W. P. Chisum sur, 505 ft from n and 150 ft from e line. F. & M. Drilling Co., Houston, K. C. Moser, 20, 1, W. H. Castleberry sur, 200 ft from s and e lines. C. E. Love, Marshall, W. Smith, 14, 1, J. S. Caruthers sur, 150 ft from s and w lines. Lucey Pet. Co., Dallas, R. Christian, 32, 1, S 7, B 7, G. W. Hooper sur, 162 ft from s and 165 ft from e line. C. H. French, Shreveport, J. M. Tuttle, 12, 1, W. H. Castleberry sur, 150 ft from n and 205 ft from e line. Delaney & Randall et al, Ada, Okla., Clemons, 22, 1, D. Sanchez sur, 356 ft from w and 389 ft from s line. Magnolia Pet. Co., Dallas, J. C. McKinney, 40, 1, D. Sanchez sur, 150 ft from n and 600 ft from w line. Yount-Lee Oil Co., Beaumont, Thrasher-Stuckey, 1, G. W. Hooper sur, 1100 ft from s and 2890 ft from e line of survey. I. Denison, 1, D. Sanchez sur, 6600 ft from s and 5875 ft from w line of survey. G. Fenton, 1, D. Sanchez sur, 4600 ft from w and 800 ft from s line of survey. A. G. Oliphant, Longview, W. Smith, 20, 1, J. S. Caruthers sur, 150 ft from s and w lines. Badgett & Cooper Drlg. Co., Chicasha, Okla., C. C. Clemmons, 30, 2, D. Sanchez sur, 150 ft from n and e lines; 1, 150 ft from s and e lines. Harper Pet. Synd., Longview, G. H. Jones, 6½, 1, W. H. Castleberry sur, 150 ft from n and w lines. J. R. Travis, Duncan, Okla., L. Osborn, 20, 1, R. R. Robbitt sur, 224 ft from e and 200 ft from s line. Gulf Prod. Co., Houston, F. Birdsong, 99, 3, W. P. Chisum sur, 1521 ft from s and 330 ft from e line; 4, 1518 ft from e and 330 ft from s line. A. Muckleroy, 100, 1, J. S. Caruthers sur, 330 ft from s and w lines; 2, 330 ft from w of center of e line; 3, 330 ft from n and e lines. Bridwell Oil Co., Wichita Falls, D. L. Magrill, 45, 1, D. Sanchez sur, 7409 ft from w and 2872 ft from s line of survey. Sun Oil Co., Dallas, J. R. Beall, 180, 2. W. P. Chisum sur, 250 ft from e and 185 ft from n line. J. K. Livingston, Tyler, Todd, 1, M. Dillard sur, 150 ft from s and w lines of Blk. 1. Skipper, Tippett & Hall, Longview, J. C. McKinley, 33, 1, D. Sanchez sur, 165 ft from s and w lines. H. W. Elliott, Fort Worth, G. H. Jones, 3, 1, Wm. Castleberry sur, center. Heep Oil Corp., Houston, M. B. Hughey, 100, 1, Warrener-McCurry sur, 155 ft from w and 155 ft from s line. Yount-Lee Oil Co., Beaumont, B. Rodden, 1, Wm. Robinson sur, 7560 ft from n and 4435 ft from w line survey. Arkansas Fuel Oil Co., Shreveport, F. K. Lathrop, 96, A4, Wm. Robinson sur, 150 ft from s and e lines; A5, 150 ft from n and e lines. Republic Prod. Co., Longview, J. B. Watson, 25, 1, M. Van Winkle sur, 144 ft from n and 213 ft from w line.

GRAY COUNTY—Texas Co., Wichita Falls, B. Bull, 480, 2, S 2, B B2, H&GN sur, 990 ft from n and w lines of section. Smith & Ash, Wichita, Kans., J. S. Morse, B, 80, 3, S 2, B 26, H&GN sur, 330 ft from s and e lines n½ ne¼.

HARDIN COUNTY — Ada Belle Oil Co., Batson, Weiss Est., 6, 146, B C, F. C. Green sur, 229 ft from w and 33 ft from s line; 147, 146 ft from w and 33 ft from s line. Rio Bravo Oil Co., Houston, Fee, 158, C 115A, J. F. Cotton sur, 200 ft n of No. 114A; C101A, 180 ft s of No. 114A; C114A, 50 ft s of No. 284.

HASKELL COUNTY—C. Fischer, Haskell, Fee, 357, 1, J. Husband sur, 975 ft from n and 990 ft from w line.

HOWARD COUNTY — Merrick & Lamb, Chalk, 10, 1, S 125, B 29, W&NW sur, 1500 ft from n and 1550 ft from w line.

KINNEY COUNTY — C. R. Cox, Wichita Falls, D. Rose, 61, 1, S 13½, A. B. Harper sur, se corner.

LIBERTY COUNTY — Harrison Oil Co., Houston, Jones, 54, 2, S 125, H&TC sur, nw corner. Old Colony, 10, 2, S 125, H&TC sur, south of No. 1.

LIVE OAK COUNTY—H. N. Greis, Tulsa, G. W. West, 1, No. 57, J. L. Vaughn sur, 3820 ft from w and 7620 ft from s line survey. Walton & Coquat, Three Rivers, J. B. Wedding, 200, 1, B. Haughey sur, 152 ft from n and 2552 ft from e line.

McLENNAN COUNTY — Mahon & Wilbanks, Fort Worth, F. Pechacek, 654, 1, No. 366, P. Gaona sur, ne corner.

NAVARRO COUNTY—Wm. Clarkson, Jr., Houston, Bradley Bros., 200, 31, R.C.S.L. sur, 600 ft from n and 1060 ft from w line. L. A. Warren et al, Dallas, Brox, 2, 1, R. W. Smith sur, 155 ft from n and e lines.

PANOLA COUNTY—Owen & Johnston et

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

al, Marshall, Daniels, 100, 1, I. Hanks sur, 600 ft from n and 550 ft from w line. Everts Drlg. Co., Wichita Falls, E. L. McDaniel, 50, 4, A. Barr sur, 350 ft n of No. 3; 3, 200 ft from s and w lines.

PECOS COUNTY — Culbertson Bros, Fort Worth, Monroe, 520, B2, S 39, B 194, GC&SF sur, 600 ft e of No. B1. S. C. Yingling, Fort Worth, J. H. Tippett, 120, 3, S 40, B 194, GC&SF sur, 150 ft from s and w lines of se¼. Cardinal Oil Co., San Angelo, J. H. Tippett, E, 160, 8, S 40, B 194, GC&SF sur, 150 ft from s and 450 ft from e line.

RUSK COUNTY—Shaw Oil Corp., Wichita Falls, R. Pool, 6, B 6, M. J. Pru sur, 150 ft from n and w lines. Humble O&R Co., Houston, M. Kangera, 35, 6, M. J. Pru sur, 185 ft from n and 390 ft from w line. Jones & Houston Oil Co., San Antonio, B. F. Hindman, 20, 1, R. W. Smith sur, 150 ft from n and e lines. W. E. Mundy, Overton, W. Brandon, 5, 1, W. G. Tuth sur, 150 ft from s and w lines. L. G. Priest, Fort Worth, J. M. Mayfield, 22, 1, D. Clark sur, 200 ft from n and w lines. C. B. Mitchell, Wichita Falls, Frederick, 16, 1, J. Ximinez sur, 150 ft from n and w lines. Devonian Oil Co. & Barnsdall Oil Co., Tulsa, J. B. Milstead, 83, 1, Penney & Collard sur, 210 ft from e and 572 ft from s line. Cranfill & Reynolds Co., Houston, G. Thompson, 10, 2, R. E. Winn sur, 218 ft from w and 330 ft from s line. C. L. McMahon, Tulsa, S. S. Laird, 45, 1, R. W. Smith sur, 150 ft from n and e lines. Humble O&R Co., Houston, L. D. Crim, 564, 17, E. G. Sevier sur, 905 ft from w and 225 ft from s line. J. N. Peterson, 112, 7, W. P. Chisum sur, 1053 ft from n and 956 ft from ne line; 6, 155 ft from w and 441 ft from ne line. S. S. Laird, 230, A4, I. Ruddle sur, 150 ft from e and 3210 ft from s line. Harrison Oil Co., & Abercrombie, Houston, Cantrell, 53, 2, Smith & Winn sur, 300 ft e of No. 1; 1, 150 ft from s and w lines; 3, 300 ft e of No. 2; 4, 300 ft e of No. 3. Danciger O&R Co., Fort Worth, N. Bean, 25, 2, I. Ruddle sur, 300 ft n of No. 1; 3, 150 ft from n and w lines. Berry, Lewis & Co., Tyler, A. J. Deason, 5, 1, M. J. Pru sur, 150 ft from s and e lines. Gulf Coast Oil Co., Houston, W. J. Brightwell, 97, 1, R. E. Winn sur, 150 ft from n and e lines; 2, 150 ft from n and 693 ft from w line; 3, 150 ft from n and 697 ft from e line. Magnolia Pet. Co., Dallas, D. Wills, 100, 1, H. Hobson sur, 178 ft from s and 212 ft from w line; 2, 200 ft from s and e lines. Humble O&R Co., Houston, L. D. Crim, 564, 19, E. G. Sevier sur, 334 ft from n and 510 ft from w line; 18, 500 ft from w and 2287 ft from s line. Eason Oil Synd., Overton, S. A. Eason, 5, 1, W. M. Hester sur, east central part of lease. Lucey Pet. Co., Dallas, B. F. Maxwell, 94, 1, E. Collard sur, 1222 ft from n and 200 ft from e line. Magnolia Pet. Co., Dallas, B. F. Rodden, 42, 6, Wm. Robinson sur, 630 ft from s and 220 ft from e line. J. E. Bradberry, 90, 1, R. W. Smith. W. P. Moore, 152, 1, J. Ellington sur, 347 ft from n and 295 ft from w line. Shaw Oil Co., Wichita Falls, L. Toliver, 10, 1, J. Ximinez sur, 150 ft from s and w lines. Heep Oil Co., Houston, A. Givens, 12½, 1, R. W. Smith sur, 300 ft from w and 200 ft from s line. Republic Prod. Co., Longview, H. P. Leverett, 108, 1, W. W. Simms sur, 150 ft from s and 160 ft from e line. C. E. Christian, 50, 1, R. W. Smith sur, 250 ft from n and 270 ft from e line. Beard & Hammond Oil Co., Tyler, J. S. Bean, 10, 1, J. Lewis sur, 150 ft from w and 229 ft from s line. G. M. Perry, 28, 1, Ryan & Cook sur, 200 ft from n and e lines. Collin & Helis, Tyler, F. Birdsong, 5, 1, I. Ruddle sur, 152 ft from n and e lines. Cap Rock Oil Co., Fort Worth, B. Montgomery, 340, 1, J. Chisum sur, 300 ft from s and w lines. L. T. Burton, 125, 1, Y'Barbo sur, 300 ft from n and e lines. J. E. Mabee Co., Tyler, W. P. Brett, 40, 1, M. J. Pru sur, 200 ft from s and e lines. Golding & Murchison, Wichita Falls, C. Young, 63, 1, M. J. Pru sur, 250 ft from n and e lines. M. L. Thompson, 50, 1, M. J. Pru sur, 150 ft from s and e lines. Houston Oil Co., Houston, J. M. Crim, A, 16½, A3, R. E. Winn sur, 150 ft from s and w lines. D. Wells, 25, 1, H. Hobson sur, 150 ft from n and e lines. Humble O&R Co., Houston, A. Blackwell, 80, 1, M. J. Pru sur, 153 ft from n and 150 ft from e line. L. D. Crim, 120, 20, W. P. Chisum sur, 170 ft from w and 301 ft from s line. S. A. Plowman, 228, 1, F. Cordova sur, 668 ft from w and 163 ft from s line; 2, 2108 ft from w and 293 ft from s line; 3, 2549 ft from w and 291 ft from s line. C. J. Thompson, 116, 2, M. J. Pru sur, 172 ft from n and 1048 ft from w line. J. H. Wooley, 200, 1, F. Cordova sur, 256 ft from e and 153 ft from s line.

RAINS COUNTY—C. H. Bayless et al, St. Louis, Ownby, 160, 1, Alexander sur, 150 ft from s and w lines.

REFUGIO COUNTY—Moody-Seagraves Co., San Antonio, T. J. O'Connor, 63, 8, Refugio sur, 358 ft e of No. 1.

SMITH COUNTY—C. L. Witherspoon, San Antonio, T. O. Wright, 5, 1, J. Vargas sur, 155 ft from n and 290 ft from e line. East Texas Refg. Co., Dallas, A. T. Tyiska, 111, 1, R. Wilson sur, 200 ft from s and e lines. M. M. Rowan, Fort Worth, Gibbons, 1000, 1, J. M. Garcia sur, 1100 ft from n and 3200 ft from w line. Imperator Oil Corp., Dallas, I. M. Green, 54, 1, T. Hogan sur, 150 ft w of center of e line. H. L. Hunt, Henderson, R. W. Fair, 131, 1, McAnulty & Vargas sur, 150 ft from n and w lines. Sun Oil Co., Dallas, J. J. Denton, 147, 1, J. Vargas sur, 250 ft from n and 288 ft from e line.

STARR COUNTY — Los Olmos O&G Co., Harlingen, Kelsey-Bass, 40, 3, Por-77-76-75, Sec. 6, sw cor of se¼ of sw¼; 4, Sec. 7, north central part ne¼ nw¼.

SAN PATRICIO COUNTY — Aransas Oil Corp., Refugio, E. Welder, 500, 1, Portillo sur, 390 ft from w and 5167 ft from s line.

SHACKLEFORD COUNTY — Bateman Oil Corp., Fort Worth, T. E. Hayden, 40, 1, S 115, Univ. Lands sur, 660 ft from n and w line nw¼ of ne¼.

SHELBY COUNTY—I. M. Bradley, Center, J. J. Ashberry, 80, 1, Mitchell sur, 1320 ft from w and 2250 ft from s line. Sloane Prospecting Co., Houston, J. H. Windham, 171, 1, A. H. English sur, 992 ft from n and 160 ft from e line. Shelby Oil Co. & Sloane Prospecting Co., Dallas, F. B. Samford, 49, 1, M. M. Vann sur, 230 ft from w and 350 ft from s line.

UPTON COUNTY — Gulf Prod. Co., Fort Worth, J. T. McElroy, 640, 94, S 195, B F, CCSD&RGNG sur, 3630 ft from n and 330 ft from w line.

VAN ZANDT COUNTY—Humble O&R Co., Houston, C. L. York, 85, 1, Wm. Daniel sur, 175 ft from e and 150 ft from s line.

VICTORIA COUNTY — Simpson-Fell Oil Co., Ardmore, A. Levi, 2183, 1, SA&MG No. 4 sur, se cor of Blk 44.

WICHITA COUNTY—A. T. Wolfe, Wichita Falls, A. Daume, 42, 2, S 1, S. P. Ry sur, 300 ft w of No. 1. T. F. Hunter, Wichita Falls, Amer. Refg. Prop. 6, J. M. Sharp sur, 300 ft w of No. 3.

WILBARGER COUNTY — Queen Oil Co., Wichita Falls, Harrold, 267, 20, S 25, B 13, H&TC sur, 475 ft from s and 1783 ft from w line; 19, 1080 ft from s and 2100 ft from w line; 21, 1753 ft from w and 780 ft from s line; 18, 480 ft from s and 2135 ft from w line.

WASHINGTON COUNTY —Yegua Oil Corp., Houston, P. Graves, 549, 1, S. Clampitt sur, center. Branham Salt Dome Deep Texas Oil Co., Brenham, A. S. Kramer, 58, 1, Jno. Hodge sur, 600 ft from nw and 300 ft from ne line.

YOUNG COUNTY—Putnam Oil Co., Cisco, J. H. Choate, 100, 1, 254, TE&L sur, 1883 ft from n and 450 ft from e line section. S. H. Simmons, Loving, B. Hawkins, 66, 1, 998, TE &L sur, 165 ft from w and 150 ft from n line Culberson Bros. Co., Wichita Falls, S. M. Jones, 120, 1, 278, TE&L sur, 150 ft from n and e lines. F. M. Stone, Fort Worth, Morris, 160, 1, 2383, TE&L sur, 150 ft from n and e lines.

ZAPATA COUNTY—O. W. Killam, Laredo, A. Bustamente, 40, 6, No. 5, Comitas sur, 150 ft from s and e lines of Blk. 8.

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CENTRAL EAST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CHEROKEE COUNTY—		
Sinclair O&G Co., McRae 1	*	3909
RUSK COUNTY—		
Dan S. Brooks-Root Ref. Co., Alford 1	*	3600
Morefield Drlg. Co. & B. T. Head, Ector 1	*	3700
UPSHUR COUNTY—		
Penn Oil Co. et al, O. B. Gage 1..	*	4105

BOWIE COUNTY—Mayfield Oil Royalties & Devore's R. B. Cooper 1, W. M. Wardsur, elev 360 ft, sd 1050 ft. Parkington & Jones et al's W. W. Whybark 1, J. H. Dyer sur, dk. W. A. Swift-G. W. Hindman & Tom Ball's Roy Merritt 1, Y. S. McKinney sur, sd 3130 ft. Lee J. Timberlake et al's J. M. Tidwell 2, L. M. Rice sur, elev 290 ft, sd in salt water 2705-09 ft.

CASS COUNTY—R. G. Baker et al's W. R. Kaver 1, John Lick sur, lcn. S. D. Hunter et al's M. Felkner 1, J.L. Chambers sur, elev 248 ft, top Pecan 2373 ft, dr 3710 ft. Geo. B. McCamey et al's R. E. Hall 1, H. Buckler sur, dr 100 ft. C. E. Murdock et al's G. W. Coody-First Nat'l Bank 1, Evans Watson sur, elev 401 ft, Pecan chalk 2522-2953 ft, coring 3365 ft. Morris et al's Henderson 1, Bailey sur, dk. Olds-Smith et al's Joe Athenay 1, J. C. Byers sur, sd 1650 ft. Pigg & Davis' Ray Bryan 1, Albert Latimer sur, dr 1660 ft. John C. Rogers et al's W. Q. Henderson 1, Wm. Davis sur, elev 354 ft, sd 955 ft; Lanier 1, K. A. Welborn sur, elev 366 ft, sd 1930 ft. Smith-Adkisson et al's Wilson 1, J. A. McFarland sur, rig.

CHEROKEE COUNTY—Ben Banner et al's A. S. Lacy (80-ac) 1, J. L. Hogg sur, dr 110 ft. D. H. Byrd et al's Fariss 2, elev 215 ft, dr 3845 ft. Fain-McGaha Oil Corp. et al's W. A. Shaw 1, I. Reed sur, rig. Helen Clair Oil Co.'s Mrs. M. B. Perkins (200-ac) 1, Thos. Sanford sur, dr 1895 ft. O. W. Killam et al's W. A. Newton 1, Thos. Quevedo sur, sp and sd. Rowan-Nichols Oil Co. & Tidal Oil Co.'s Ousley 1, T. L. Smith sur, top Pecan chalk 3138 ft, dr 3400 ft. Wm. A. Stone et al's E. M. Decker 1, Geo. Ruddle League, dr shale 3720 ft. Sinclair O&G Co.'s Martin 1, Larkin Baker sur, rig; J. R. McRae 1, F. J. Ballnova sur, elev 335 ft, Pecan chalk 2918-3250 ft, top Austin chalk 3740 ft, dry and abn in salt water 3874-3909 ft. Walton Oil Co.'s E. Singletary 1, Tillman Waters sur, sd 1385 ft.

DELTA COUNTY — The Delta Co.'s M. Neatherly 2, J. B. Alexander sur, sd 2870 ft. D. S. Hoad et al's J. J. Baker 1, R. Carson sur, elev 437 ft, sd 1550 ft. Worthington & Stedham's W. H. Dejernett 1, E. Chick sur, elev 492 ft, sd 1925 ft.

FRANKLIN COUNTY—Harper-Byers Oil Co.'s A. J. Laws 1, D. G. Rogers sur, sd 2855 ft.

FREESTONE COUNTY — Hicks et al's Lampier 1, D. Avant sur, lcn. E. L. Smith Oil Co.'s E. Jackson 1, Wiley Carter sur, rig.

HENDERSON COUNTY — Arcadia Ref. Co. & Shell Pet. Corp.'s Dean 1, Simon Boon sur, dk. Westhyde Inc. Co.'s Thornhill 1, Jas. Spivey sur, lcn.

LAMAR COUNTY—K. O. Bundy et al's G. S. Legate 1,J . V. Cheney sur, rig. Everett & Allen's J. A. Guest 1, Luke Roberts sur, elev 525 ft, top Pecan chalk 2072 ft, dr 2420 ft. Lamar County Dev. Co.'s T. W. Watson 1, I. L. Aud sur, dk. Puritan Oil Co.'s Geo. Parr 1, R. Russell sur, dk.

LEON COUNTY—Sun Oil Co.'s Ella Grayson 1, Marquette Blk, top Austin chalk 3462 ft, dr chalky-lime 3490 ft.

NACOGDOCHES COUNTY—Beach, Scully & Harwell's Driver 1, Patricia de Torres sur, coring 740 ft. Benedum & Trees' Conkrite 1, Chireno sur, dr 2300 ft shale. C. M. Bowie's Miller 1, Strode sur, set 8-in cas 670 ft. Bunte, Martin & Scroggins' Boatman 1, 14 mi n Nacogdoches, ru. J. F. Burke et al's Pattison 1, sd 4270 ft. Fain & McGaha's Pirtle 1, Edward sur, lcn. Matthew Foreman's Mattauer 1, Chireno sur, dk. Joiner et al's Reeves 1, Lloyd sur, ru. Sequoia Oil Co.'s Boyd Estate 1, Oliver sur, ru. John Starks et al's Langford 1, Cason sur, sd 3860 ft. W. W. Wheeler's Parmalee 1, Kirby sur, washing to bottom 2100 ft. E. L. Chapman-Tilford's Hunt 1, Bennett sur, dr 300 ft. Joiner & Henson's Andy Legg 1, Durst sur, ru. J. C. McNeal's Hayter 1, Boren sur, ru.

MORRIS COUNTY — Verne Dumas Pet. Co.'s Thos. Ball 1, A. S. Young sur, dk. Holmes-Nelson & Flynn's O'Conner 1, J. B. Cherry sur, elev 379 ft, top broken Pecan chalk 2590 ft, dr 2715 ft.

NAVARRO COUNTY—Young et al's Farmer 1, dr 1115 ft.

RAINS COUNTY—Berry-Hale et al's Owenby 1, J. Alexander sur, rig. Rains County Oil Corp. (R. A. Westbrook's) Wm. Cates 1, Calvin Gage sur, top Pecan chalk 2232 ft, dr 3450 ft.

RED RIVER COUNTY—E. L. Chapman et al's Morris-Guest 1, jkd hole and skid rig. Droppleman & Bundy's J. W. Cunningham 1, S. V. Chi sur, sd 2745 ft. C. M. Joiner-M. Harris & Echols-Peters' E. Howison 1, W. Humphries sur, elev 540 ft, sp and sd. Everett & Allen et al's W. F. Bryan 1, P. Vaughn sur, dk. Pierson et al's J. R. Dellahunty 1, sp and sd. Johnson Pet. Co.'s S. C. Style 1, E. M. Dean sur, sd 2405 ft.

RUSK COUNTY—Dan Brooks et al's Alford 1, abn in Georgetown lime at 3520-3600 ft. R. W. Giles-Frank Melat et al's Newt Orr 1, Wm. Tippett sur, dr 915 ft. F. Griffith et al's F. J. Lowe 1, Wm. Williams sur, elev 366 ft, top Pecan chalk 2790 or 2820 ft, sd 3106 ft. J. S. Kimbrough et al's Weatherly 1, Robt. Martin sur, dr 2410 ft. E. C. Laster, Inc. & Miller's B. B. Gray 1, Jas. McLean sur, dk. Morefield Drlg. Co. et al's Ector 1, dry and abn in Georgetown lime 3518-3700 ft. Rusk County Oil Co.'s Robertson 1-A, dr 1420 ft. Nat Sadler et al's Ed. Sparks 1, Abner Nail sur, fsh 1270 ft.

SMITH COUNTY — Big Indian Oil Co.'s Mills-Wolford 1, Jas. Jordan sur, elev 420 ft; rig; Holland 1, Thos. Allen sur, sd 2230 ft. E. L. Chapman et al's Alexander 1, dr 1250 ft. Cotton Belt Oil Co.'s C. S. Jackson 1, rig. East Texas Ref. Co.'s Tyiska 1, R. Wilson sur, dr 1120 ft. Howard Pet. Co.'s Lee Holt 1, Barnes Clark sur, top Pecan chalk 2840 ft, top Austin chalk 3807 ft, sd in chalk 3823 ft. Dumas Pet. Co.'s Cook (17.4-ac) 1, rig. H. L. Hunt et al's W. R. Fair 1, McAnulty sur, top Pecan chalk 2716 ft, dr 3085 ft. Imperator Oil Corp.'s I. M. Green (53.3-ac) 1, T. Hogan sur, sp and sd. C. M. Joiner et al's W. M. Wright 1, E. Van Sickle sur, top Pecan chalk 2360 ft, dr 3085 ft. C. C. Julian Oil & Roy. Co.'s Motley 1, J. T. Daniel sur, lcn. Guy V. Lewis et al's R. G. Wright 1, lcn abn. Magnolia Pet. Co.'s J. R. Wright 1, J. Vargus sur, lcn. C. R. Morrison et al's Roy 1, H. C. Cook sur, dr 1700 ft. Owen-Sloan Oil Co.'s M. Starnes 1, Sam Epps sur, dk. M. M. Rowan et al's Gibbons 1, J. Margarcia sur, rig. Ruffin-Kilgore Oil Co.'s H. Florence 1, Barnes Clark sur, Pecan chalk 2775 to 3183 or 3260 ft, dr chalky-shale 3805 ft. Sinclair O&G Co.'s Jarvis 1, J. Vargus sur, elev 389 ft, top Pecan chalk 2715 or 2728 to 3065 ft, top Austin chalk 3535 ft, cem cas on oil sand 3699-3709 ft; Mayfield 1, Jas. Jordan sur, elev 446 ft, top Pecan chalk 2875 ft, dr 3110 ft; Mayfield 2, elev 540 ft, base Pecan chalk 3208 ft, dr 3250 ft; Wiley 1, elev 537 ft, Pecan chalk 2887-3222 ft, Austin chalk 3695-3783 ft, tested water with small amount oil in sand 3853-61 ft. T. B. Slick & J. G. Kugle's Freeman 1, A. J. Lagrone sur, elev 498 ft, Pecan chalk 3080-3275 ft, fsh 3623 ft. Sun Oil Co.'s J. J. Denton (147½-ac) 1, J. Vargus sur, rig; J. Henson (216-ac) 1, dk; O. W. Knight (264-ac) 1, David Collins sur, lcn. The Texas Co.'s M. Blackwell (100-ac) 1, Jas. Jordan sur, dr 1710 ft. C. L. Witherspoon Oil Co.'s T. O. Wright 1, J. Vargus sur, top Pecan chalk 2690 or 2714 to 3060 ft, dr 3275 ft.

UPSHUR COUNTY—Mudge Oil Co.'s J. D. Richardson 1, D. Ferguson sur, elev 451 ft, Pecan chalk 2622-3083 ft, top Austin chalk 3645 or 3695 ft, made flow oil via drill stem at 3725-42 ft and sd to set cas.

EAST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
Karona Pet. Co., A. J. Bohler 1, S. F. Sparks sur	*	3161

HARRISON COUNTY — Hunter et al's Daugherty 2, W. B. Burris sur, 12½ cas 245 ft, ta in Georgetown 3563 ft. Karona Pet. Co.'s A. J. Bohler 1, S. F. Sparks sur, elev 310 ft, top Nacatosh 1437 ft, top Georgetown 2812 ft, dry abn in Georgetown, td 3161 ft. O. H. Parkening's T. J. Taylor 1, Walter H. Payne sur, rig. T. J. Taylor 2, J. C. Hawley sur, dk. Rowan & Nichols' Henry Pitts 1, E. A. Merchant sur, lcn. Crump & Hannagan's Dunn 1,Bettie Humphries sur, elev 330 ft, base PG and top Saratoga 2830 ft, ta 4006 ft. W. G. Ray Drilling Co.'s Hall 1, D. Davis sur, 10-inch 173 ft, top AC 3445 ft, base AC 3471 ft, top PG 2257 ft, base PG 2859 ft, top Georgetown 3472 ft, sd wo. Siegel Bros. et al's T. J. Taylor 1, F. O'Neal sur, lcn. Sinclair O&G Co.'s Davenport 1, J. V. Morton sur, elev 396 ft, top PG 2420 ft, base PG 2960 ft, tested dry 5 ft sand 3693-98 ft, sd wo 3735 ft. Geo. L. Pace's Barker 1, Victor Pedraso sur, elev 349 ft, top PG 2207 ft, dr 2489 ft. Banner et al's Lowry 1, W. O. Stanfield sur, sd in bro chalk 2136 ft. Ryan Cons. Pet. Corp.'s H. H. Key 1, E. Carroll sur, rig. Everts Drilling Co.'s Sypert 1, Richard Hooper sur, dk. J. M. Gholson's Bivins 1, T. K. Pearson sur, dk. Olford et al's Bolding 1, W. O. Stanfield sur, rig.

MARION COUNTY—Trammell et al's Hussey 1, Chas. Lockhart sur, elev 282 ft, top chalk 1771 ft, 8¼ cas 1514 ft, ta junk in hole, td 1878 ft. Rondeau & Hindman's McGaugherty 1, W. J. Willis sur, co to deepen, td 2450 ft. Hindman et al's Lindsay 1, Alex Albright sur, sd 400 ft. J. W. Hamilton's Wood 1, Alex Albright sur, sd 400 ft. Eden Oil Co.'s De Ware 1, R. Hazelwood sur, elev 208 ft, 10-inch 400 ft, top PG 2105 ft, base PG 2595 ft, dr sandy shale 3005 ft. Sinclair O&G Co.'s Wright-Braden 1, Jacob Grover sur, elev 336 ft, top Georgetown 3451 ft, sd 3463 ft. D. R. Coulter 1, Wm. Russell sur, elev 376 ft, dr lime 3906 ft. Gist Claunch et al's Laun 1, Henry Fugham sur, rig.

PANOLA COUNTY—Smith et al's Hunt 1, Albert Johnson sur, dk. Bell et al's Burnett Lbr. Co. 1, S. B. Hendrick sur, elev 186 ft, sd 3335 ft. Dillon & Bradham's Baldwin 1, Hampton West sur, 12½ cas 43 ft, claim top PG 1500 ft, sd 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test). Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, 12½ cas 780 ft, top chalk 1352 ft, 8¼ cas 1900 ft, sd 2600 ft. Neff et al's Brumble 6, B. C. Jordan sur, dk (Trinity test). Texas Co.'s Brumble 12, Jno. Womack sur, 10-inch 1200 ft, dr lime 3880 ft (Trinity test). Ark. La. P. L. Co.'s Werner Sawmill 3, B. C. Jordan sur, 12½ cas 142 ft, 9-inch 3448 ft, 7-inch 4650 ft, dr 4683 ft. Everett Prod. Co.'s McDaniel 1, Alamson Barr sur, dr 362 ft (third hole, all shallow). Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, dk.

SABINE COUNTY—Loring Oil Co.'s Nona Mills Lbr. Co. 1, Jas. Mason sur, ta 4803 ft.

SHELBY COUNTY—Sloane Pros. Co.'s T. B. Sandford 1, M. M. Vann sur, rig; Windham 1, A. H. English sur, 10-inch 180 ft, dr 1410 ft. Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3111 ft. E. L. Chapman's Pickering Lbr. Co. 1, C. F. Henry sur, 10-inch 240 ft, dr chalk and shale 2635 ft. Maulding et

al's Frost Lbr. Ind. 1, A. B. Fountain sur, 12-inch 500 ft, dr 1000 ft. H. H. Gracey's J. A. Morrison 1, Wm. English sur, rig. I. M. Bradley et al's J. J. Asberry 1, G. W. Mitchell sur, sp dr 100 ft. T. A. Martin's J. B. Bush 1, Alfred Lindsey sur, dk.

WEST TEXAS

Completion

ECTOR COUNTY—
Southern Crude Oil Pur. Co., Cowden 2 ..... 450 4302

BORDEN COUNTY—Geo. Goodrum et al's Conrad 2, set cas 687 ft.

BREWSTER COUNTY—Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, dr 2905 ft.

COKE COUNTY — Reid-Hitchins & Stanolind O&G Co.'s Duncan 1, elev 2151 ft, sp and sd.

CONCHO COUNTY—W. I. Betts & Dennis' Wood-Hendrick 1, sp and sd. A. W. Turner-Cromwell & Wesner's Brosig 1, elev 1699 ft, sd 1885 ft.

CRANE COUNTY—Cranfill Bros. Oil Co. & Gulf Prod. Co.'s J. B. Tubb 1, elev 2526 ft, salt 505-1400 ft, top brown lime 1410 ft, top white lime 2455 ft, pb from 5336 ft to shoot oil and gas pay. H. H. Sides et al's B. P. Nolen 1, elev 2355 ft, dr 210 ft.

CULBERSON COUNTY—Cranfill Bros. Oil Co. et al's Seay 1, elev 3867 ft, top Deleware 2034 ft, dr 2090 ft. W. L. Kornrumpf et al's W. D. Garren 1, sd 1280 ft.

DAWSON COUNTY—R. A. Albaugh et al's Robinson 1, sp, sd.

ECTOR COUNTY—Galt-Brown Co. & Penn Oil Co.'s Cowden 1, elev 3047 ft, top anhydrite 1525 ft, top salt 1535 ft, dr 3620 ft. Southern Crude Oil Pur. Co.'s Cowden 2, elev 3965 ft, top anhydrite 1782 ft, salt 1872-2805 ft, completed flowing 450 bbls oil 4217-4302 ft.

EL PASO COUNTY — Tri-State Oil Co.'s Bobadella 1, sd 540 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Flanigan 2, elev 1810 ft, co 3660 ft. Stanolind O&G Co.'s Steele 2, elev 1873 ft, dr 1850 ft. The Texas Co.'s J. A. Jean 1, rig. Texas Unity Oil Co.'s First Nat'l Bank of Rotan 1, elev 1848 ft, dr 2430 ft.

GAINES COUNTY—Landreth Prod. Corp.'s Nick Alleu 1, rig. Texas Consolidated Oil Co. & T. P. Coal & Oil Co.'s E. H. Jones 1, elev 3636 ft, top anhydrite 2120 ft, top salt 2225 ft, sd 3435 ft.

GARZA COUNTY—Garza County Dev. Co. (Penny & Porsey's) Justice 1, elev 2266 ft, sd 1990 ft.

HOWARD COUNTY—Conoco & Group One Oil Corp.'s E. E. Brindley 1, elev 2530 ft, top salt 1170 ft, dr 1950 ft. Greene Prod. Co.'s Denman 1, elev 2250 ft, sp and temp abn.

HUDSPETH COUNTY—R. G. Patillo & Ed. Welch's K. S. Briggs 1, dr 465 ft.

IRION COUNTY — Benedum-Trees et al's Sugg 1, rig. Perry & Fox's Nutt 1, elev 2278 ft, abn with hfw 1490 ft. Stanolind O&G Co.'s W. H. Williams 1, elev 2544 ft, dr 4905 ft. Straughn et al's Tankersley 1, elev 2306 ft, sd 1506 ft. F. E. Webb et al's Nutt 3, elev 2347 ft, dr 1230 ft.

JONES COUNTY—J. C. Abers & L. D. Prewitt's L. L. Burton 1, rig. Bonds-Trout et al's Williams 1, sd 2581 ft. Jake Croft & Conner & Tidal Oil Co.'s W. D. Swann (84-ac) 1, dr 150 ft. Hardly Able Oil Co.'s Butler 1, dr 2440 ft. C. C. Julian Oil & Roy. Co.'s Sears 1, lcn. J. B. Jameson et al's King 1-A, elev 1653 ft, sd 1960 ft. Shaheen Oil Co. et al's Chittum 1, elev 1676 ft, pb from salt water at 2048 ft to test oil sand 1972-75 ft. Tex-Mex Oil Co. & Eastland Oil Co.'s Brewer 1, rig. Al Kruger-Ungren & Frazier's King 1, elev 1661 ft, completed flowed 555 barrels oil 7 hrs 1993-2006 ft. Union Oil Co. (Nevada's) Mrs. Jane Hoyt 1, sp. Andy Urban et al's Ed. Quinn 1, rig. Sam C. Yingling et al's E. D. Coates 1, dr 2120 ft. Young & McNeil's L. R. Cade 1, dr 810 ft.

LOVING COUNTY — The California Co.'s J. G. Allen 3, elev 2741 ft, top salt 815 ft, dr by tools 2845 ft; Allen 4, cem cas 715 ft. Carl Cromwell & Atlantic Oil Prod. Co.'s Russell 2, rig. Erwin & Mohres Dev. Co.'s McGinley 1, rig, abn; W. R. Lind 1, dk; Lillie Thorpe 1, dr 410 ft. Folbre & Evans' D. P. Dean 1, fsh 1385 ft. Grisham-Hunter Corp.'s Dean 1, sd 1330 ft. Henshaw et al's Reagan 2, rig. Pete Hoffman et al's Ramsey 1, top salt 760 ft, sd 3620 ft; Ramsey 2, ur 720 ft. Lewis & Slagel Drlg. Co.'s Cartwright-Henderson 1, elev 2901 ft, salt 585-2907 ft, top Delaware lime 3086 ft, top sand 3127 ft, pb from salt water 3180-82 to 3179 ft. Lockhart & Co.'s I. J. Bell 1, elev 2705 ft, top salt 770 ft, dr 1620 ft. H. W. Martinet et al's Johnson 1, lcn abn. Richmond Drlg. Co.'s Wheat-Russell 1, elev 2678 ft, top salt 765 ft, dr 2210 ft. W. A. Sudderth & James' Capitola pool 1, dr 710 ft. F. S. Tennant et al's Roy Martin 1, sp and sd. West Texas Pet. Co. (A. R. Eppenauer's) Allen 2, top salt 810 ft, sd 4110 ft; Salisbury 1, elev 2786 ft, salt 890 to 4140 ft, top Delaware lime 4344 ft and top sand 4382 ft, flowed 132 bbls after shot 190 qts 4341-82 ft, td 4384 ft, co for 2nd shot.

MENARD COUNTY— J. C. Barnett et al's Callan 4, elev 2079 ft, sd 1085 ft. L. G. Priest et al's Sorrells 1, elev 2279 ft, co 2970 ft. Voss & Bryan's Brandenberger 1, elev 1921 ft, fsh 805 ft.

PECOS COUNTY—Cosby Prod. & Royalty Co.'s W. D. Riser 1, elev 2313 ft, top salt 540 ft, dr 1015 ft. W. B. Hagan et al's Shearer 1, dr 615 ft. J. R. Miller et al's Bennett 1, sd 2285 ft. Penn Oil Co. et al's J. B. Alvis 1, elev 3493 ft, dr 3240 ft. W. F. Whittaker & Calloway's Devlin 1, elev 2706 ft, co 420 ft.

REEVES COUNTY — The California Co.'s Kloh 2, trace oil 2568-75 ft, dr salt 2810 ft. Humble O&R Co.'s Balmorlea 1, rig. Lee O. White et al's Hersheusen 1, co 4415 ft.

RUNNELS COUNTY—Chas. Dutton et al's Dean 1, sd 2335 ft.

SCHLEICHER COUNTY—Eastland Oil Co. Unit Plan's Tisdale 1, elev 2295 ft, dr 2130 ft. J. D. Wesner et al's Ratcliff 1, elev 2408 ft, dr 3240 ft.

SCURRY COUNTY — R. B. Pender O&G Co.'s Davis 1, elev 2208 ft, top salt 445 ft, co at 5040 ft after lowering cas. Seifert & Dibble's Blackman 1, top salt 720 ft, sd 3112 ft.

STERLING COUNTY — W. C. Beasley et al's Foster 1-A, elev 2518 ft, sd 1560 ft.

TAYLOR COUNTY — Adams-Ferguson & Hobbs' Lowe 3-A, dr 1010 ft. J. B. Jameson et al's Webb 1, elev 1950 ft, dr 6365 ft. Sanger et al's Abilene fee 1, elev 1759 ft, sd 2785 ft.

TERRELL COUNTY — Mid-Kansas O&G Co.'s H. M. Goode 1, elev 2405 ft, sd making 1,890,000 ft dry gas, td 6120 ft. Leonard Jones et al's Peckenham 1, elev 2607 ft, sd 1245 ft.

UPTON COUNTY—Bennett Oil Co. & P. H. Williams' Shirk 1-A, sd 2727 ft. C. C. Duffey et al's McClintic 4, show oil 2770-2805 ft, sd for shot 3110 ft. Gulf Prod. Co.'s McElroy 93, elev 2688 ft, top salt 1100 ft, dr 2670 ft; McElroy 94, dr 865 ft. Mintex Oil Co. & Harry Baldwin's Lane 1, elev 2743 ft, top salt 738 ft, dr 1000 ft. Bert Weekley Oil Corp.'s McClintic 2, elev 2715 ft, top salt 1135 ft, set cas 2625 ft.

WARD COUNTY—Alpine Oil & Dev. Co.'s Boogher 3, elev 2741 ft, top salt 810 ft, dr 1635 ft. Beckley et al's Johnson 1, dr 835 ft. Bell & Wier's Boogher 1, top salt 800 ft, dr 1800 ft; Boogher-Cummings 1, top salt 785 ft, dr 1850 ft. Buster Black et al's Hall-Roberts 1, co 625 ft. Alex Bradford et al's B. Carson 1, elev 2457 ft, top salt 820 ft, dr 950 ft. Clyde Bradford et al's Hordage-Wilson 1, elev 2544 ft, top salt 1027 ft, top anhydrite 775 ft, dr 2205 ft. Bradford & Abell's E. R. Allen 1, machine. The California Co. & Atlantic Oil Prod. Co.'s A. B. Gordon 1, elev 2523 ft, top salt 1000 ft, flowed 96 bbls oil 2352-2508 ft. Central Gas & Oil Co.'s Lee Monroe 1, sp and sd. Gibson Bros. et al's Johnson 1, elev 2432 ft, top salt 720 ft, sd 800 ft. Gulf Prod. Co.'s Hutchings 7, elev 2648 ft, top anhydrite 910 ft, top salt 1162 ft, flowing 184 bbls oil 2490-2552 ft; O'Brien 17, top salt 1085 ft, dr 1355 ft. Harkinson et al's A. Emory 1, dr 660 ft. Magnolia Pet. Co.'s Sealy-Atlantic 1, elev 2586 ft, top anhydrite 1505 ft, dr 2530 ft. R. F. Owen et al's Johnson 1, elev 2499 ft, top salt 1600 ft, dr 4210 ft. Peck et al's Geo. Merritt 1, sd 845 ft. Rector Oil Co. et al's Smith 1, machine; J. F. Boogher 1, lcn. Shipley Oil Corp.'s Monroe 1-A, elev 2655 ft, top salt 2485 ft, sd 3803 ft; Hayzlett 5, sd 2507 ft. Simms Oil Co.'s M. Himmel 1, rig. Chester Smith et al's Boogher 1, making 3 mil ft gas and est 10 bbls oil per hour 2164-65 ft. White et al's L. H. Owenby 1, dr 760 ft.

WINKLER COUNTY—Magnolia Pet. Co.'s Bashara 1, elev 2884 ft, top anhydrite 829 ft, top salt 996 ft, top lime 2317 ft, dr 3440 ft.

SOUTH TEXAS

BASTROP COUNTY—Turner, Wharton and Anderson's J. E. Harris 1, Joshua Gray sur, 3 miles n Dale pool, abn 2348 ft.

BEE COUNTY—Grebin & Woods' Riggs 1, James Nowland sur, 6¼ miles w Skidmore, 2 miles from Live Oak County line, lcn. Alexander et al's McFall 1, 3 mi s Skidmore, sd 305 ft. Catlett & O'Neill's Miller 1, Ronald Hoskins sur, 8 mi w Beeville, reaming 4390 ft. Mineral Oil Co.'s (Mauldin and Fisher) A. J. Kimnall 1, 300 ft s and 21 degrees e of Grayburg Kimball well, Stephin Winship sur, 7 miles sw Pettus townsite, produce 105 barrels daily on two inch line, 35 gravity oil, sand 3537-40 ft, total depth 3544 ft. Moody-Seagraves Prod. Co.'s McKinney 2, Geo. Habbermacher sur, 3 miles n Pettus pool, near Morgan's McKinney 1 gasser, ru, prep to spud. Davis et al's Geo. Ray 1, ne corner Ray 39-a tract, just n of Morgan's Ray 1, one-half mile sw of Pettus townsite, dk. J. S. Mauldin's Mauldin 1, just s Pettus townsite, G. A. Kerr sur, sd 3862 ft for casing, sand 3847-54 ft. United Prod. Co.'s Ray 33, between Pettus and discovery pools, completed 325 bbls, sand 3989-99 ft; Ray 38, 900 ft e and 10 degrees s of No. 35, T. Hanson sur, set surface csg 383 ft.

BEXAR COUNTY—Camp et al's Chavez 1, 12 miles se of S. A. on 7000-acre block in 200-acre tract in Juan Montez sur, near San Antonio river, mov on machinery. Russell & Moore's A. O. Mills 3, A. Navarro sur, 10 mi se San Antonio on Somerset road, sd 938 ft. J. Morgan Russell's Price-Story 1, A. Navarro sur, 10 miles s San Antonio on Somerset road, dr 1172 ft in hard gumbo. Uechert et al's Palfrey 1, 7 mi se San Antonio, near Brooks field, sd about 1808 ft. Weilbacher and Brock's Ernewt 1, J. Christopher sur, 2 mi n Somerset, sd 925 ft.

BROOKS COUNTY—The Texas Co.'s Allen Land & Cattle Co. 1, 7110-acre San Antonito grant, dr 200 ft. Howeth et al's Singer 1, sur 436, 400 ft e of Humble's Singer 1, lcn. Houston Oil Co.'s Holbein-Wormser 3, Palo Blanco de Maguellas grant, near Palo Alto Creek, abn 4904 ft.

CALDWELL COUNTY — Mills and Chapman's McMahan 1, 6 mi se Lockhart, Pinchback sur, dr 2320 ft. Rayor et al's Dunlop 1, near Luling, dr 2430 ft, last report. Ralph Ogden et al's O. S. Alexander 1, 10 mi se Lockhart, 450 ft n of Foster-Reiter's Alexander 1, dr 425 ft.

DUVAL COUNTY—Humble Oil & Refining Co.'s Kohler 50, Kohler pool, sur 164, dr 6045 ft in shale. O'Byrne et al's Weil Bros. 1, 7 mi sw S&O pool, sur 568, sd to repair boiler, td 1720 ft. Southern Oil Co.'s King-Harper 2, sur 323, lcn. S. J. Carpenter's (Gus Pape) Juan Benavides 1, sub of No. 1 Carpenter sub, Mesquite Grant, blk 38, dr 1400 ft. Magnolia Pet. Co.'s Wilson 3, sur 134, S&O pool, ru; W. Benavides 1, sur 172, Cole pool, lcn. The Texas Co.'s Bishop Duval Land Co. 1, sur 135, S&O pool, ru. Coffee et al's Jose Garza 1, center sur 49, Garza Irrigation Co., dr 825 ft.

FRIO COUNTY—Wray & Dunbar's Barnes 1, 1 mile from Big Foot, sec 123, dr out plugs, 5 3/16 inch casing set 3662 ft.

GOLIAD COUNTY—Gibson Oil Co.'s Parks 1 (wo) 5 miles ne Goliad, sdtr 4520 ft at last report. The Slick Estate's Riedel 1, sw of Poetter discovery well, W. C. Brown sur, test sw at 4562-74 ft, abn.

GONZALES COUNTY—Linden Pet. Co.'s Cowley 1, n part of county, abn at 4915 ft.

GUADALUPE COUNTY—McGarrity et al's August Wesch 1, H. M. Johnson sur, nw part of county, 2 miles n Marion, dr abt 500 ft, showed little oil in Del Rio at 475 ft.

JIM HOGG COUNTY—Magnolia Pet. Co.'s Y. V. Cuellar 1, blk 92, W. A. Dannelly sub, sur 575, share 2, E. Peyote grant, fsh for 2 joints 6 inch drill stem at 3443 ft. P. & H. Oil Co.'s (Peterman and Hinnant) Palacios 1, 2 miles s and 10 degrees e of Randado field, blk 14, sur 231, sd 1360 ft.

JIM WELLS COUNTY—Carsil O&G Co.'s McGill 2, 900 ft due n of No. 1 gasser, Wm. D. Baldwin sur, 3 miles n Armagosa, spudded.

KARNES COUNTY—Karnes County Dev. Co.'s W. J. Hubbard 1, 3 mi w Kenedy, sand 2306-16 ft, little gas and trace of sw, sand 2620-30 ft, sw, abn at 3010 ft.

KENDALL COUNTY—Perkins et al's Law-

horn 1, ne Boerne, put new rig over old hole, to re-dr to 600 ft. Hardy Sitton's W. B. Garvin 1, D. L. Richardson sur No. 7, one mile ne Kendalia, dr 1068 ft.

KERR COUNTY — Col. B. M. Hatridge's townsite 1, blk 23, Westland addn, in edge of Kerrville townsite, move rig back on hole to re-dr, total depth abt 465 ft; Rischworth 1, sec 1459, GC&SF sur, near Center Point, sd 117 ft, 10-inch casing set 80 ft, well drilled to present depth with spudder, which has been moved off, heavy rig to be installed. Evans and Gant's Jeff Love 2, sw corner sec 1953, one-half mile se discovery well, to move on; Seiker and Mears 1, sw corner sec 1605, CCSD&RG NR Ry. sur, dr 1390 ft. A. S. Mims et al (Chester A. Martin) J. E. Young 1, nw corner sec 28, n and slightly east discovery well, move on machinery.

KLEBERG COUNTY—Barbee & Hunter et al's Finnegan 1, nw corner John D. Finnegan tract, 7 mi s Kingsville, dk.

LA SALLE COUNTY — Fred W. Volz' Coleman 1, blk 15, sur 514, sd 40 ft.

LIVE OAK COUNTY — Burke Greis Oil Co.'s George West 1, 10 mi w Geo. West townsite, center James L. Vaughan sur No. 57, mov on. Houston Oil Co.'s T. G. Parr 1, -A, ¾ mi s Brown Land & Cattle Co. 4, John McMillen grant, abn 2800 ft; Brown Land & Cattle Co. 4, sw corner M. B. Kivlin sur, total depth 5726 ft, plug back to 1918 ft, whipstock and start milling out. Simmons Oil Co.'s Wedding 1, 2 miles n Three Rivers, dr 1750 ft.

McMULLEN COUNTY—Camp & Stanolind O&G Co.'s J. O. Massey 1, ½ mile s Town Lomo Alto, sur 474, abn 4041 ft.

MEDINA COUNTY—Sun Flower Oil Co.'s Mofield 1, 3 miles w Ina field, sur 532, dr 1622 ft, topped Eagleford 1610 ft. Yancey Dev. Co.'s Faseler 1, 1½ mile n Yancey, sur 801, dr 1232 ft.

NUECES COUNTY—Saxet Oil Co.'s Dunn 8, 1500 ft nw Dunn 7, Saxet field, dr 500 ft. Gulf Coast Oil Co.'s Maggie Harrell 1, GC&SF sur, sec 311, blk 32, ru.

REAL COUNTY — Gant and Kilgore and Eastland Oil Co.'s Dan Auld 1, sec 23, CCSD&RGNR Ry. sur, 3 miles sw Love well, dr 2780 ft. Evans and Sprinkle et al's Haby 1, sec 175, AB&M sur, 7 mi sw Love well, dr 1515 ft.

REFUGIO COUNTY — Houston Oil Co.'s Rooke 14, 3 miles w of main field in gas district, dr 6151 ft. Humble Oil & Refining Company's D. M. Conner 1, ¾ mile sw of O'Conner 1 of Houston Oil Co., near Victoria line, lcn.

SAN PATRICIO COUNTY — Aransas Oil Co.'s Welder 1, 5 miles ne Sinton, set 6⅝-inch csg 3652 ft, wait on cement, tested 825 pounds on one-fourth inch choke in four minutes in sand at 3653-63 ft. United Production Co.'s Cage 3, White Point field, dr 3680 ft in lime and shale. Saxet Oil Co.'s White Point Development Co. 4, White Point field, tested sw, now dr 4884 ft.

STARR COUNTY—Willow O&G Co.'s Kelsey Bass 1, blk 8, sub of Porcion 75-76-77, Jurisdiction of Camargo, abn 520 ft. B. B. Tips' Frank Doyono 1, lower tract 4, Porcion 81, fsh 332 ft. Sacramento Oil Co.'s Seabury et al 1, sd 349 ft.

VICTORIA COUNTY — Lion Oil Refining Co.'s McFadden 3-A, 5303 ft e of No. 1, C. O. Edwards survey, dr 3638 ft. Simpson Fell Oil Co. & Westheimer et al's Levi 1, 10 mi s Victoria, 15 mi ne McFadden field, dr abt 250 ft. T. B. Slick Estate's McFadden 1, ne Lion Oil Refining Co.'s Producers, dr 440 ft. The Texas Co.'s McFadden 3, McFadden field, lcn. United Prod. Co.'s McFadden 1-B, near Calhoun County line, showed sw in sand at 3893 ft, abn. Houston Oil Co.'s Beck 1, lcn; McFadden 3, lcn.

WEBB COUNTY—Cole Pet. Co.'s (Carson) Benavides 2 (formerly 4), sur 1601, dr 1250 ft. Geo. S. Marshall's C. W. Webster 3, sur 684, Carolina-Texas pool, pumping 75 bbls, sand 2630-55 ft. Carolina-Texas Oil and Gas Co.'s Barnsley 9, blk 13, sur 268, dr 2000 ft.

ZAVALLA COUNTY—Texas Gas Utilities Co.'s Pryor 5, Pryor field, topped sand 674 ft, set casing, wait on cement.

ZAPATA COUNTY — Trevino Oil Corp.'s Trevino 8-A, blk 26, sur 412, ru. Benson Oil Co.'s S. Vela 1, blk 12, sur 259, dr 1330 ft. E. C. Brogan's Montemayor 1, blk 11, sur 64, dr 1200 ft. W. T. Bill Henry's Gopher Trust Estate 1, blk 11, sur 4, Fullerton sub of Share 8, Borrego Grant, sd 1400 ft, lay new water line. O. W. Killam's A. Bustamante, blk 8, share 5, Fansler Partition, Comitas Grant, sand 1231-43 ft, set casing 1231 ft, wait on cement; Cuellar 40-C, sur 278, dk. Lowe & Rogers' P. Benavides 2, blk 13, sur 613, dr 1200 ft. P. H. Meyers' I. G. Trevino 1, blk 24, sur 412, abn 1914 ft. National Oil Co. of Texas' Luther et al 1, blk 97, Da Pron sub, ne ½ Porcion 6, sd 590 ft. Nielson and Coursey's Luther et al 1, blk 11, sec 5, Fullerton sub, Share 8, Borrego grant, sd 1148 ft. Nordan and Morris' Jose Bustamante 1, share 35, Fansler Partition, Comitas grant, dr 1451 ft. J. I. Newton's U. G. Trevino 3, blk 7, sur 66, lcn. O. & A. Co.'s Garcia 3, share 3, Fansler Partition, Comitas Grant, completed 100 bbls, sand 1204-29 ft, casing 1209 ft. Penny Prod. Co.'s J. V. Cuellar et al 1, blk 11, sur 2, Pappas sub, Porcion 33 and 34, dr 2035 ft. F. A. Talmadge and G. Mackenzie's G. F. Trevino 1, blk 6, sur 4, Marts and Beavens sub, Porcion 2 and 3, sd 519 ft. T. H. Ward's Uribe 1, blk 8, share 7, Partition 6, Trinidad Uribe Partition of Juan V. Borrego Grant, rigged up and sd.

TEXAS GULF COAST

ANGELINA COUNTY—R. D. Moore's Abney Estate 1, Tuinalty Sur., set 6⅝-in cas 1280 ft. Pollock Oil Co.'s Sessions 1, Garza Sur., dr 2500 ft sand.

AUSTIN COUNTY—O'Hara et al's Schrader 1, Hacienda Sur., sd 3620 ft. Empire's Kunze 1, San Felipe, dr 6650 ft shale. Parmeson & Cafferkey's Scholeckte 1, Fitzgibbons Sur., dr 930 ft clay. Humble's Remmert 1, lcn.

BRAZORIA COUNTY—Thos. Faust et al's Fee 6, Nash dome, dr 6470 ft shale. United Oil Synd.'s Speer 1, 3 mi n Danbury, dr 1850 ft shale. Freeport Sulphur Co.'s Fee 2001, Bryan Mound, sd 5140 ft. Layne et al's Wisdom 7-A, Damon Mound, comp for 900 bbls. 3708 ft. D. C. Wellock's Hammond 1, Damon Mound, lcn. Rycade & Amerada's Seaburn 2, Stratton Ridge, dr 7620 ft shale.

BURLESON COUNTY — Doran et al's Sparks 1, fsh 1300 ft. Mid-South Oil Co.'s Duckworth 1, 2 mi e Clay Station, sd 2640 ft. Reynolds Oil Co.'s Harris 1, 4 mi e Creisman, sd 400 ft.

CALHOUN COUNTY — The Texas Co.'s Smith 1, Chocolate Creek, dr 4420 ft sand.

CHAMBERS COUNTY — Pure's Mayes 13, Lost Lake, dr 2250 ft gumbo.

FAYETTE COUNTY — Elam & Reynolds' Florence 1, dr 1310 ft shale.

FORT BEND COUNTY—Cullen & West's Lockwood 1, 3 mi s Thompson, ru. Doney & Means' Blakely 1, Blue Ridge, set 6⅝-in cas 3720 ft. Telschow, Cady et al's Blakely 1, Blue Ridge, dr 1150 ft gumbo. Gulf's Moore 29, Moores Field, dr 70 ft sand.

GALVESTON COUNTY—Yount-Lee's Cade 20, ru.; Cade 21, sp in.

HARRIS COUNTY—Humble's Minnetex 5, Mykawa, ru.; Minnetex 6, set 13⅜-in cas, 1310 ft. Rio Bravo's Settegast 21-A, Pierce Junction, ru.; Westheimer 1, lcn; Smith-Hamill Dr. Co.'s Parson 1, lcn. Smith et al's Fee 3, prep to pump.

HOUSTON COUNTY—A. E. Winfree's Hodges 1, Russell Sur., lcn.

JACKSON COUNTY — Chicago Gulf Co.'s Rodgers 1, Edna, dr 2100 ft.

JEFFERSON COUNTY—Humble's McFadden 1, 8 mi e Big Hill, dr 6920 ft shale and lime. Keith et al's Reed-Hankamer 1, 3 mi e Westbury, dr 4650 ft sand and shale. The Texas Co.'s Pipkin 4, Big Hill, dr plug 5680 ft. Yount-Lee's McFadden 145, Humphrey Sur., lcn.

LIBERTY COUNTY—Cranfill-Reynold's Davis 7, dr 3310 ft shale. Texas Gulf Sulphur Co.'s Carter 4, ru.; Munger 1, dr 900 ft gypsum. Gulf's Boyt 13, 1750 ft sand. Humble's Breeden 2, Moss Bluff, abn 6570 ft; Sergent 2, dr 5920 ft shale. Texas Gulf Sulphur Co.'s Cowan 1, Moss Bluff, dr 800 ft sand.

MATAGORDA COUNTY — Cockburn Oil Corp.'s Hawkins 2, Shepherds Mott, prep to dd. 5240 ft. Empire's Booker 1, Citrus Grove, dr 5780 ft shale and lime, test showed s.w.

MONTGOMERY COUNTY—Whilhite & Hornbeck's Lieberman 1, 3 mi w Conroe, coring 3775 ft.

ORANGE COUNTY—Crews Oil Co.'s Mansfield 1, Stephenson Sur., washing to bottom 1410 ft.

POLK COUNTY—Freeman et al's Freeman 2, 4 mi se Leggett, dr 2800 ft shale.

SAN AUGUSTINE COUNTY — Lambeau Thompson Drlg. Co.'s Whitton 1, Welding Sur., lcn.

TYLER COUNTY—King Oil Co.'s Caswell 1, sd 1250 ft. Allied Pet. Co.'s Wilson 3, dr 4860 ft shale and lime. L. H. Wentz's Long Bell Lbr. Co. 1, Seale Sur., dr 3320 ft sand and shale.

WASHINGTON COUNTY—Cord Oil Co.'s Hahn 1, 6 mi n Brenham, dr 1880 ft. Penn Tex Oil Co.'s Kamas 2, Williams Sur., sd 2800 ft. Sun Oil Co.'s Clay 5, Clay Creek, comp for 850 bbls 1746 ft; Janner 5, dr 1040 ft shale; Marcus 3, lcn; Schlottman 3, dr 1710 ft lime. Yegua Oil Co.'s Graves 1, 3 mi n Independence, sd.

WHARTON COUNTY—H. H. Givans' Hudgins 3, rm 1430 ft. Poole & Chappell's Poole 1, 1½ mi w Lissie, ru.

LOUISIANA GULF COAST

ASCENSION PARISH—Triumph Oil Co.'s Lacey 2, stdg 4225 ft.

AVOYELLES PARISH — M. L. Vincent's Morrow 1, sd 4220 ft.

BEAUREGARD PARISH—Beauregard G&O Co.'s Cochran 1, lcn, 400 ft s and 700 ft w of ne cor of sec 34-4s-12w.

CALCASIEU PARISH — Wilfred Lahay's Jardell 1, sd 3250 ft. Dr. Thomas et al's Hewitt 1, 2 mi e Edgerly, lcn. Vacuum's State 7, dr 6410 ft, shale; Miller 12, stdg 3790 ft; Miller 31, lcn. Yount-Lee's Miller 2, lcn, 125 ft n and 120 ft w of se cor ne¼ nw¼ sec 8-10s-9w, J. O. Davis' Ind. Lbr. Co. 1, 8 mi n Starks, sd 6565 ft. Gulf's Moore 27, Starks, lcn. Union Sulphur Co.'s Fee 762, dr 8980 ft, salt; Fee 765, dr 4180 ft sand; Fee 766, dr 4570 ft sand.

CAMERON PARISH — Freeport Sulphur Co.'s Gulf Land Co. 7, Black Bayou, lcn. Shell's State 2, dr 6200 ft, salt. The Texas Co.'s State 7, lcn. Vacuum's Cameron Meadows 2, dr 3015 ft, shale. Federal Pet. Co.'s Hebert 2, Hackberry, dr 5100 ft, sand and shale. R. E. Seiss' Vincent 2, dr 1950 ft, shale. Magnolia's Sweet Lake Land Co. 2, Sweet Lake, sd 4870 ft. Pure's Yount-Lee 10, dr 7340 ft, shale.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 11, Jefferson Island, dr 850 ft, lime.

IBERVILLE PARISH—Standard of La.'s Gay 1, Bayou Choctau, dr 4190 ft, sand; Baist 1, Bayou Blue, dr 3780 ft, anhydrite; Schwing 1-A, dr 6000 ft, shale; Schwing 3, sd 2990 ft; Wilbert 9, Bayou des Glaise, dr 2450 ft, sand; Case 2, ta.

JEFFERSON DAVIS PARISH — A. V. Peters' Smith 1, Welsh, dr 1130 ft, gbo.

LA FOURCHE PARISH—The Texas Co.'s Leesville 2, dr 3620 ft, sand.

ST. MARTIN PARISH—Humble's Woodward 1, Bayou Bouillon, dr 6460 ft, shale and lime; State 4, dr 4720 ft, sand and shale.

ST. TAMMANY PARISH—Washington and St. Tammany Dr. Co.'s Coussack 2, ta 2030 ft.

TANGIAPAHOE PARISH—Joan Dev. Co.'s Lake Superior Oil Co. 1, ta 3010 ft.

TERREBONNE PARISH—The Texas Co.'s Bay St. Elaine 1, cutting casing 4750 ft; Caillou Island 6, dr 4070 ft, lime; Dog Lake 4, sp in; Four Isle 5, Four Isle Bay, dr 600 ft, lime; Lake Barre 6, dr 980 ft, sand; Lake Barre 8, abn 6790 ft; Lake Barre 10, lcn; Lake Barre 11, lcn; Lake Barre 12; Lake Barre 13, cap pil; Lake Barre 14, lcn.

VERNON PARISH—Weir & Smith's Delta Land & Lbr, Co. 1, abn 4580 ft.

VERMILION PARISH — Pure's Alliance Trust Co. 1, Gueydan, lcn.

WEST FELICIAN PARISH — Putnam Synd.'s Como Plantation 2, dr 1100 ft, shale.

SOUTHERN CALIFORNIA

Completions

SAN FERNANDO VALLEY—
San Val Oil Co., No. 1, 14-1-16..... * 2046

ALHAMBRA—Fred H. Hammer's Huntington Land 1, 24-1-13, sd 3393 ft.

BASSETT — Huntington Central Oil Co.'s Pellissier 1, 34-1-11, new lcn.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, dr shale 278 ft.

CORONA—Western Gulf's Abacherli 1, 12-3-8, dr shale 2375 ft.

CULVER CITY—Olympic Oil and Realty Co.'s No. 1, 14-2-15, re-dr 4675 ft.

DOMINGUEZ—Tenacity Oil Co.'s Del Amo 1, 11-4-13, sd 8500 ft.

FULLERTON — Standard's Bastanchury 1, 21-3-10, flowed salt water on production test, plugged to 7750 ft, td 8145 ft, will run tubing to continue test.

HERMOSA BEACH—E. S. Cone's Kellogg-Burdick 1, 6-4-14, dr 200 ft. Corniel Oil Corp.'s No. 1, 31-3-14, 8⅝-in cas cmt 2710 ft, td 3190 ft. Hermosa Exploration Co.'s No. 1, co 2755 ft. Tulsa Oil Co.'s Hermosa 2, 6-4-14, dr shale 2435 ft. Westwood Pet. Co.'s No. 1, 6-4-14, 8⅝-in cas cmt 2675 ft, td 2760 ft.

NEWHALL — Consolidated Oil Co.'s Hammond 1, 8-3-16, dr shale 2826 ft. O.C.O. Oil Co.'s No. 1, 14-3-16, lcn. Southern California Drilling Co.'s Needham 5, 13-3-16, rig.

NEWPORT—Standard's Irvine 1, 26-6-10, dr hard sand 4375 ft.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, sdtr bit 4400 ft, td 4910 ft.

OLINDA—Graham-Loftus Oil Co.'s No. 1, 18-3-9, dr shale 6840 ft.

OLIVE—Texas' Community 1, 7-4-9, dr shale 4500 ft.

PLAYA DEL REY — Mesmer City Realty Co.'s No. 1, 24-2-15, dr shale 4700 ft. West Port Pet. Corp.'s No. 1, 27-2-15, dr shale 5633 ft.

PUENTE—Guarantee Oil Co.'s Rowland 1, dr streaks oil and sand 4078 ft.

ROSEMEAD—Rancho Oil Corp.'s Harmon 1, 30-1-11, dr gray sand 5788 ft.

REPETTO HILLS—Texas' F. M. 1, 4-2-12, dr hard sand 3128 ft.

SUNSET BEACH—Gieck Oil Corp.'s No. 1, 20-5-11, dr shale 300 ft.

TORRANCE—C. M. Sheeley's No. 1, 12-4-14, rig.

WILMINGTON — Wilmington Consolidated Oil Co.'s No. 1, sp. York and Smullin's Olympic-Watson 1, 29-4-13, co for production test, td 3698 ft, swabbed some 20 gravity oil.

NORTHERN CALIFORNIA

KERN COUNTY

BELRIDGE—Belridge Oil Co.'s No. 27-8, 27-27-20, sd 3730 ft; No. 27-64, 27-20-20, dr hard brown shale 3722 ft; No. 35-8, 35-27-20, dr shale 4375 ft; No. 35-33, 35-27-20, sd 3982 ft; No. 35-48, 35-27-20, sd 4760 ft; No. 35-49, 35-27-20, sd 1055 ft. Continental's Result 2, 36-27-20, dr shale 4015 ft. General Pet.'s Berry 1, 30-28-21, dr hard shale 4035 ft. Ohio's Bloemer 1, 36-27-20, plugged to 5900 ft, sd, td 5986 ft. Reward Oil Co.'s Associated 4, 34-27-20, coring shale 4915 ft. Standard's McPhail 2, 36-27-20, coring shale 5228 ft. Texas' Martin 1, 22-27-20, sd 5065 ft. Union's Belridge 17, 36-27-20, plugging off bottom salt water, td 5600 ft. K. C. Wallace's No. 1, 32-29-21, co 4212 ft.

BLACKWELL'S CORNER — F. B. Langstroth's No. 1, 14-26-19, rigged up. E. J. Miley et al's No. 1, 17-26-19, rigging up rotary.

BUENA VISTA HILLS — Federal Drilling Co.'s No. 6, 20-31-24, pumping water, td 5367 ft, may re-cmt.

BUTTONWILLOW — Wilshire Oil Co.'s Nordon-Salisbury 1, 7-29-24, 6⅝-in cas cmt 5017 ft, td 6995 ft.

CARRIZO PLAINS — Panorama Oil Co.'s Panorama 1, 7-31-21, re-dr 2395 ft. Tray-El Oil Co.'s No. 1, 7-32-22, dr hard sand 1300 ft.

DEVIL'S DEN—Cumberland Oil Co.'s No. 1, 21-26-18, co 1590 ft. Standard's Alferitz 1, 14-25-18, sd 2870 ft.

MOJAVE—Kendall Development Co.'s No. 1, 27-11-9, new lcn.

SEMITROPIC—Shell's Williams 1, 17-27-23, swabbing to 8920 ft, will survey hole before continuing test, td 9702 ft.

SHALE HILLS—Rio-Cal. Pet. Co.'s 2-27-18, co 2300 ft.

TEMBLOR HILLS—Kent and McDonald's No. 1, 3-32-22, cmt 12½-in cas 1700 ft.

WEED PATCH—Alpine Oil Co.'s Di Giorgio 1, 13-31-29, dr shell 3705 ft. Mohawk Oil Co.'s Earl 1, 4-31-29, rigged to sp; Wharton 1, 32-30-29, plugged to 5740 ft, td 6150 ft. Osborn and Coulter's Shell-Duff 1, 15-30-29, dr out cmt, td 1927 ft. Shell's Morris 1, 32-30-29, dr shale 5165 ft; Porter 1, 29-30-29, dr shale 6300 ft; Porter-Day 1, 29-30-29, dr hard sand 8340 ft.

SANTA BARBARA COUNTY

COAL OIL POINT—Bolsa Chica Oil Corp.'s Augur 191-1, 24-4-29, swabbing water and small amount of oil, td 4191 ft, plugged to 4100 ft.

GATO RIDGE — Barnsdall's Tognazzini 1, 9-8-32, fsh for drill pipe 6225 ft.

GOLETA—General Pet.'s More 3, dr green shale and sand 5100 ft. George W. Johnson's Duncan 1A, 19-4-27, dr shale 2215 ft. Southern California Drilling Co.'s Bishop 1, 12-4-29, dr shale 1115 ft.

ORELLA—General Pet.'s Erburo 10, dr gray sand 1675 ft.

PURISIMA — O. C. Field Gasoline Co.'s Union Annex 3, will deepen from 3145 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr hard brown shale 6215 ft.

VENTURA COUNTY

HOPPER CANYON—Bardeen Pet. Co.'s No. 1B, 13-4-19, rigged to sp.

OJAI—Drednaught Oil Co.'s No. 1, coring hard shale 3400 ft.

OXNARD—Magu Syn.'s Utt 1, dr hard shale 2915 ft.

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson A2, 23-3-24, dr hard shale 9278 ft. Continental's Grubb 1, 23-3-24, dr shale 2568 ft.

SANTA PAULA — San Pedro-Pt. Fermin's Kellerman 2, 13-4-21, dr shale 3115 ft.

SESPE — Merchants Pet. Co.'s Cochran 1, 1-4-20, dr shale 1100 ft. Superior's Kirtlan 1, 15-4-21, dr shale 6400 ft.

MISCELLANEOUS

FRESNO COUNTY—Associated's Mitchell-Jacalitos 1, 22-21-15, 13⅜-in cas cmt 3680 ft, td 4503 ft, making water shutoff test, may deepen.

KINGS COUNTY—T. H. Purman's Avenal 1, 36-23-17, dr shale 3178 ft. Kettleman-Lakeview Oil and Gas Co.'s No. 1, 11-23-19, repairing cas, td 1285 ft. Valley Exploration Co.'s Brennan 1, 20-23-20, swabbing above plug at 3610 ft, td 3710 ft, showing water and trace of oil.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 6600 ft.

SAN LUIS OBISPO COUNTY—Cities Service Pet. Co.'s Emerick 1, 34-27-11, fsh for bailer 3970 ft. C. Shockley's No. 1, 13-32-13, dr shale 2855 ft. Continental's Hallman 1, 26-25-11, dr hard gray sand 5115 ft.

SANTA CLARA COUNTY — Sargent Oil Co.'s No. 1, 1-12-3, rig.

SANTA CRUZ COUNTY—Wellton Oil and Gas Co.'s Galletly 1, dr out cmt 2880 ft to test showing below 6⅝-in shutoff at 2666 ft.

TULARE COUNTY—Big Four Drilling Co.'s No. 1, 29-23-27, co to test, td 4330 ft. Ducor Pet. Co.'s Zimmerman 1, 14-24-27, fsh for bit, td 2180 ft. George Knopp's No. 1, 20-22-27, sd 600 ft. W. D. McCoy's No. 1, 35-21-27, re-dr 700 ft. C. E. Pettingill's Campo Verde 1, 15-22-27, dr oil sand 854 ft. Larsen, Stanford and Ellis' No. 1, 20-24-23, lcn.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros.'s Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al's Sornick 1, nw c se hfw 2070-2170 ft sd 2700 ft. T 26n, R 1w, Sec. 32, Boucher et al's Jefferson 1, ne c sw sd 3502 ft.

HARPER COUNTY—T 25n, R 20w, Sec. 12, Empire's Bruce 1, sw c ne ne sw, td 7936 ft pb and shot no results. Will plug.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Collmer 2, ne c se ne sw, sd 5640 ft lost tools.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al's Acre 1, c sw ne, show gas 5298-5303 sd 5330 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, se c nw, sd 5850 ft.

NOBLE COUNTY—T 21n, R 1e, Sec. 12, Barnsdall et al's Micksch 1, nw c sw hfw 4923-26 ft, will abandon.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma's Phillips 1, c nw sw, sd 4600 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al's Quier 1, se c sw, sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, Summitt Drlg. Co.'s Hays 1, nw ne nw, show oil 3185-3208 ft sd 3250 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al's McFadden 1, ne c sw, rig. T 22n, R 5e, Sec. 2, Sherry et al's Milsap 1, se c sw, sd 1750 ft. T 20n, R 5e, Sec. 6, W. A. Rookstool's Berry 1, nw ne sw, sd 1951 ft sho gas.

LINCOLN COUNTY—T 13n, R 6e, Sec. 8, Atlantic's Beebee 1, sw ne sw, lcn. T 13n, R 6e, Sec. 9, Mid-Continent et al's Lillie 1, ne c se, dr 1620 ft.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd et al's Shepperd 1, se nw sw, sd 3690 ft. T 11n, R 10e, Sec. 4, M. H. Watts's Chaplin 1, sw c lcn.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, sw nw se, show gas 5654-64 ft, fsh tools 5687 ft. T 8n, R 14e, Sec. 14, C. O. Cannady's Smith 1, sw c ne nw nw, rig and tools. T 7n, R 14e, Sec. 5, C. O. Cannady et al's Travis 1, c sw ne, rig. T 6n-R 15e, Sec. 7, Perrine et al's Ringland 1, nw c ne, td 1505 ft d&a.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English et al's Weaver 1, c nw se, dr 1580 ft.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff Trustee's St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al's Bruner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T 8n, R 3e, Sec. 21, Droppleman et al's Jones 1, se c nw, dr 4020 ft. T 6n, R 4e, Sec. 6, Magnolia's Harris 1, nw c sw, dr 3486 ft.

SEMINOLE COUNTY—T 6n, R 7e, Sec. 15, Magnolia's Harris 1, nw c sw, dr 3486 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co.'s Williams 1, c sw, dr 3825 ft. T 11n, R 26w, Sec. 4, J. J. Rook and Palmer's Davis 1, c nw ne (owd) sd 2956 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Snodgrass et al's Blocker 1, nw c, dr 1800 ft. T 8n, R 18w, Sec. 21, Burns & Price's Dock 1, sw c sd 150 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell's Cliffel 1, nw c, sand 1462-1501, sd 1615 ft. T 7n, R 21w, Sec. 23, H. A. French's Murphy 1, sw nw se, ur 6-in 1540 ft.

STEPHENS COUNTY—T 1n, R 8w, Sec. 25, Rose Southard's McKinley 1, ne c, sd 1063 ft.

HUGHES COUNTY—T 5n, R 11e, Sec. 15, J. J. Wright's Roberts 1, se c sw, ¶2 915-18 ft, sd 1645 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee's Phillips 1, ne c sw, r.ur.

COAL COUNTY—T 2n, R 8e, Sec. 10, Whitney et al's Miller 1, se c ne (owd) sd 760 ft. T 1n, R 8e, Sec. 35, W. E. McCraw's Stiring 1, ne c se, sd 1040 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al's Guinn 1, nw c, show gas 360-72 ft sd 500 ft.

BRYAN COUNTY—T 6n, R 7e, Sec. 14, W. A. Johnson's Ussery 1, se c, sd 325 ft. T 7s, R 10e, Sec. 8, Bryan Oil Co.'s Childs 1, ne se sw, sd 660 ft.

KANSAS

MORTON COUNTY — Hydraulic Oil Co., State land 1, nw se, 22-34-43w, sd 3460 ft.

COWLEY COUNTY—Fisher et al, Hunt 1, c sw se se 11-34-3e, ru and sd.

SUMNER COUNTY—Spencer et al, Porter 1, ne sw se se 11-34-3e, ru and sd. Otstot et al, Warlow 2, c se nw se, 22-33-3w.

COWLEY COUNTY — Roth and Farrout, Reidy 1, c sw nw ne, 8-32-4e, sd 1040 ft.

HARPER COUNTY—Beeler et al, Bear 1, c ne, 21-31-6w, td 1830 ft, sd.

FORD COUNTY—Carter et al, Community-Everett 18, c ne, 22-29-21w, (6000 ft test) dr 2714 ft.

SEDGWICK COUNTY—Bucket et al, McNanaman 1, c ne nw nw 2-20-1e, 10-inch 2301 ft, hfw 2295-2370 ft, ts 2440 ft, sd.

FORD COUNTY—Swain et al, Kenthorn 1, c nw, 21-25-24w, 5-inch 4600 ft, dr 4753 ft.

STAFFORD COUNTY—Rosenthal, Stanolind & Amerada, Gray 1, c ne, 11-24-13w, dr 180 ft.

RENO COUNTY — Shell & Continental, Blake 1, sw se se, 23-23-4w, top chat 3256 ft, 8-inch 3267 ft, td 3269 ft, co.

HARVEY COUNTY—Empire & Shell, Showalter 1, nw se, 23-23-2w, dr 2900 ft, 8-inch 2983 ft, T. Chat, dr 3330 ft.

MARION COUNTY—Maidwell, La Master 1, nw c, 31-22-4e, sd 650 ft.

COFFEY COUNTY—Hegberg et al, Kroft 1, se sw se, 30-22-14e, 10-inch 818 ft, td 1300 ft, sd. Roberts et al, Jay 1, sw se nw 32-22-15e, td 1250 ft, sd.

BARTON COUNTY—McCool et al, Tsern 1, c sw se ne 12-20-11w, td 1600 ft.

LYON COUNTY—Sheedy et al, Brown 1, c w½ se, 10-20-11e, rig.

RUSH COUNTY—Dewey & Mitchell, G eenwalt 1, c sw 17-19-16w, sd 2130 ft.

RICE COUNTY—Skelton Oil, Ott 1, c se se, 16-19-14w, sd 2065 ft. Deitrick & Langston, Purcell 1, nw c, 33-19-9w, td 905 ft, fsh tools.

McPHERSON COUNTY — Henderson & Holden, Sommerfield 1, c ne sw, 23-19-1w, 6-inch 3247 ft, Viola 3417-18 ft, hfw, td 3450 ft, testing pipe.

BARTON COUNTY—Syndicate Oil, Boertz 1, c nw se ne, 13-18-12w, 10-inch 1954 ft, td 2140 ft, fsh tools.

RICE COUNTY — Allison & Fitzwilliams, Blake 1, ne nw, 9-18-10w, rig. McFadden & Shell, Jennings 1, c sw ne nw 29-18-6w, pb to sg at 1130 ft.

NESS COUNTY—Gypsy, Coleman 1, c sw ne, 25-17-25w, 8-inch 3860 ft, 6-inch 4158 ft, T. conglomerate 4373 ft, dr 4614 ft, 3000 ft water in hole.

ELLSWORTH COUNTY—Gilmore Oil Co. et al,, Sturn 1, nw sw, 31-17-9w, est 2½M gas 2480-85 ft, show water 2620 ft, dr 3010 ft.

MORRIS COUNTY—Urschell et al, Bersuch 1, c nw se nw, 10-17-7e, ru sd.

ELLSWORTH COUNTY — Alladin et al, Stoddenberg 1, c sw, 22-15-10w, sd 1130 ft.

SALINE COUNTY—Stanolind et al, Martin Community 1, ne se se, 3-16-3w, K.C.L. 2168 ft, 10-inch 2292 ft, dr 2425 ft.

MORRIS COUNTY—Hankenson et al, Cessnum 1, sw se 24-16-9e, show oil 1589 ft, 6-inch 1732 ft, sd 1950 ft.

FRANKLIN COUNTY—Fields et al, Usher 1, se c 35-16-17e, sd 400 ft.

RUSSELL COUNTY—Hall et al, Mills 1, se sw se, 30-14-13w, 12-inch 701 ft, dr 2268 ft.

ELLSWORTH COUNTY — Milton et al, Kaster 1, se ne, 6-14-9w, 10-inch 1734 ft, dr 2095 ft. Hershey et al, Schaltz 1, c ne, 9-14-8w, dr 650 ft.

OSAGE COUNTY—Riggs-Smith, Wood 1, c se nw, 31-14-15e, 10-inch 1050 ft, sd.

RUSSELL COUNTY — Austin Drlg. Co., Rockefeller 1, se c 6-13-12w, 3320-25 ft, hfw, td 3374 ft.

SALINE COUNTY—Twin Mounds Oil Co., Weis 1, c w½ ne nw, 30-13-4w (owd) 19-inch 1010 ft, sd 2710 ft.

DICKINSON COUNTY—Severs et al, Livingood 1, ne sw, 13-13-2e, sd 3850 ft.

RUSSELL COUNTY—Gilbreath et al, Bratton 1, c ne, 33-11-13w, 8-inch 2485 ft, td 2814 ft, sd.

GRAHAM COUNTY — Schleimeyer et al, Clark 1, c sw ne ne, 11-9-25w, rng 8-inch 3715 ft, 6-inch 3848 ft, 4040-46 ft s. o., dr 4052 ft.

CLAY COUNTY—Nebraska Oil, Tivier 1, sw c 19-8-9e, dr 2495 ft.

SHERIDAN COUNTY — Flo et al, Shoemaker 1, se sw sw, 27-27-26w, 10-inch at 1178 ft, dr 1455 ft.

ROOKS COUNTY—Empire, Holsman 1, c sw ne se, 17-7-20w, hfw 2540 ft, dr 2705 ft.

WASHINGTON COUNTY — Simcox, Penwell 1, nw se ne, 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al, Unknown 1, sw c 3-2-35w, sd 2700 ft.

ARKANSAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
MADISON COUNTY—		
J. W. Baxter, Hallem 2, 17-16-22..	* 405	
OUACHITA COUNTY—		
Belmont et al, Dean 1, 16-15-17....	* 2907	
SEBASTIAN COUNTY—		
Ozark Nat. Gas Co., A. B. Bryant 1, 28-8n-30w . .....¶3¼	1557	

CHICOT COUNTY—H. R. Smith's Lytle 1, 31-18-3, cemtd back to 2865 ft ta old td 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr's Underwood 1, nw ne 4-20-8e, sd cur titles 1214 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd 3740 ft.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, rig.

DALLAS COUNTY—Jno. James, Tr's Fordyce Lbr. Co. 1, ne nw 11-9s-15w, 10-in 176 ft tested in joint mud thru ds 2492-2502 ft arr sr and re-test td 2502 ft. E. C. Brewer, Tr's Hillman 1, se ne 20-10-13, 10-in 138 ft sd in rock 2846 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3n-19w, cas pulled hfsw ta td 3756 ft.

GRANT COUNTY — Spann & McClung's Sarah Page 1, sw nw 3-3-12, dr lime rock 936 ft.

HOT SPRINGS COUNTY — Jno. Watkins, Tr's Cunningham 1, 11-5-16, sd wo drill stem td 220 ft.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19-25, rig. McIver et al's Hattle 1, nw ne 1-20-26, 12½ cas 115 ft, sd 2520 ft. Smitherman & McDonald's Bodcaw 1, se nw nw 16-15-22, 12½ cas 42 ft 8¼ cas 1176 ft cored oil sand 1194-98 ft, cemtd 6⅝ cas, 1193 ft, dr plug unable bail lower than 400 ft off bottom, sw and show heavy oil arr pull liner and core td 1198 ft. Cosby Prod. and Royalty Co.'s Biddle 1, 1-20-26, lcn.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LITTLE RIVER COUNTY — Fay Roberts Oil Co.'s Russell 1, nw nw 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MADISON COUNTY—J. W. Baxter's Hallem 2, cent sec 17-16-22, dry abn in shale td 405 ft. Hallem 3, ne sw 1-17-26, dry abn in clay and gmbo td 42 ft.

MILLER COUNTY—E. & F. Oil Co.'s E. L. Beck 1, 36-15-26, ⅝ cas 2792 ft 4½ cas 2957 ft sd 2968 ft. Bullock Oil Co.'s Hervey 1, 2-15-26, ta junk in hole td 2832 ft. East Texas O&G Co.'s Hervey 1, 2-15-26, ta 890 ft. Gusher Bend Oil Co.'s Adams 1, nw nw 24-14-26, 10-in 115 ft, ta 2680 ft. O'Hara et al's Person 1, 31-15-25, lcn. Fitzwater et al's Beck 1, sw se 33-15-26, 10-in 85 ft sd. J. S. McRae's Smith 1, nw se 28-15-26, dk.

OUACHITA COUNTY — Belmont et al's Dean 1, 16-15-17, top red beds 2765 ft junked abn in sandy shale td 2907 ft. Copenhaver et al's Elliott 1, se se 11-15-17, 6-in 2185 ft bailed dry sd td 2210 ft. Wesson & Bonner's Wesson 1, sw nw 22-15-19, 6⅝ cas 2083 ft wo power to pump, 300 ft fluid in hole td 2169 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, show heavy oil 567 ft dr lime rock 2920 ft. E. R. Henderson's Lee 1, sw se 31-8s-24w, dk.

POPE COUNTY—Ark. La. P. L. Co.'s McFadden & Brooks 2, ne nw 15-9-21, 13⅜ cas 1900 ft, tested 1 mil gas 3285 ft 8⅝ cas 3415 ft 8-in cas 3451 ft 5 3/16 cas 4145 ft dr sand 4356 ft. Baird 1, se nw 11-7w-20w, 10-in 1168 ft arr set 6⅝ cas 3403 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, fsh cas td 1536 ft. Waldron O&G Co.'s J. G. White 1, sw nw 17-3n-29w, 10-in 225 ft sd wo cas td 1860 ft (sec hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd after testing sw 2515 ft. Ozark Nat. Gas Co.'s A. B. Bryant 1, se ne 28-8n-29w, gauged 3¼ mil ft gas 250 lbs r.p. td 1557 ft.

SEVIER COUNTY — Tri-State O&G Co.'s Bank of DeQueen 1, s½ sw 34-8s-32w, dk.

UNION COUNTY—Hickman et al's Hogg 1, 35-16-17, top Graves sand 2351 ft top red beds 2779 ft whipped stock at 2090 ft, cored new hole to 2140 ft sd old td in shale 3328 ft. Rice et al's Whatley 1, 7-17-15, sd 2186 ft. Southern Prod. Co.'s Wingfield 1, se nw 16-19-15, 10-in 103 ft sd 2608 ft. Lion O.R. Co. et al's Guy P. Hayes A-9, sw ne 4-16-15, sp 12½ cas 270 ft dr shale and bldrs 1330 ft (to be 5000 ft test). Wilson & Chapman's Ned Parker 1, nw se 3-18-13, 10-in 230 ft sd 315 ft to drill water well. Hadley 1, ne sw 3-18-13, 10-in 102 ft sd 600 ft fluid in hole 30 per cent sw td 3570 ft. Marine Oil Co.'s P. Winn Est. A-2, nw nw 11-18-13, rig.

WASHINGTON COUNTY — Taylor et al's Runny 1, 1-13-29, sd 1702 ft. Lincoln Lease Holding Synd.'s Townsite 1, 30-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, ta 850 ft. Delbert Graves' Cunningham 1, 14-15-32 sd in gray sand 602 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY — T. Luckett's Balcon 1, 36-7-12, sd while fsh td 5710 ft.

NORTH LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
SABINE PARISH (Zwolle)—		
Natural Gas Prod. Co., Sabine 2, 1-7-12	*	2710
Jordan Drilling Co., La. Long Leaf 1, 3-7-11	300	2600
H. W. Perritt, Bowman-Hicks 3, 2-7-12	307	2440

BIENVILLE PARISH—Jamestown Synd.'s Lawhon 1, sw ne 15-16-8w, show gas in sandy shale (Tokio), 6-inch cas 2845 ft, fsh cas, td 2854 ft.

BOSSIER PARISH — Andrews & Davlin's Nattin 1, 15-22-14, dr 2785 ft. Rambaugh et al's Allison 1, 10-19-13, sd 1100 ft. Flint River Oil Co.'s De Moss 1, 22-22-13, rig. Hankins et al's Newell 1, ne ne 12-19-11, rig (test for upper Trinity). H. I. Morgan's Hendricks A-13, 22-19-11, sp 10-inch 135 ft, dr 420 ft (Trinity test).

CADDO PARISH—United Gas Pub. Serv. Co.'s Emmons 1, ne sw 27-23-16, 12½ cas 363 ft, 9-inch 3635 ft. 6⅝ 5396 ft, setting tub to test, td 5541 ft; Fortner 1, nwc frac sec 5-22-16, 5-inch 5430 ft, coring 5586 ft. Gordon M. Garry's Hatcher 1, nw ne 11-17-15, lcn (to be 5500 ft test). Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, 15½ inch cas 200 ft, 12½ cas 1129 ft, dr shale 1450 ft (5500 ft test).

CATAHOULA PARISH—National Drilling Co.'s Marsh McMillian 1, 26-9-6s, 6⅝ cas 2796 ft, tested sw sd 3097 ft.

CALDWELL PARISH — Hundson et al's Burton 1, 36-12-2e, sd 2799 ft. Carter Bell et al's Taylor 1, 42-14-4e, rig.

CLAIBORNE PARISH—Baird Bros. et al's Whittaker 1, 30-27-7w, tested 5 fourbles mud and sw 2964 ft, sd 3000 ft.

CONCORDIA PARISH—Joe Marr et al's Maxwell 1, 38-3-8e, sd 3622 ft.

DE SOTO PARISH—W. H. Weichert's H. Smith 1, 31-14-15, top gas sand 1653 ft, top chalk 1901 ft, sd 2350 ft. Neff et al's Ramsey 1, 33-13-16, 12½ cas 80 ft, bit lost in hole, sd 3000 ft. E. T. Oakes' Johnson 1, 30-13-15, rig.

NATCHITOCHES PARISH—C. M. Talley et al's Talley 1, 29-11-10, tested dry show oil in bro sand and shale 1256-69 ft, bailed dry 1380 ft, sd wo. W. M. Coates et al's Collins 1, sw nw ne 28-9-10, base Midway chalk 2612 ft, base hd lime 4039 ft, tested 15 joints mud and sw 4020-91 ft, ta 4091 ft. J. W. Cooper et al's Cooper 1, 35-11-10, sd 3156 ft; Cooper 2-A, 35-11-10, top chalk 1400 ft, sd 1515 ft.

RED RIVER PARISH—Lucky Strike Oil Co.'s Chaffraix 1, 33-12-10, junk in hole, ta 3010 ft.

SABINE PARISH—J. C. Walton's Sabine 1, ne nw 11-7-12, 6⅝ cas 2119 ft, sd 2376 ft. Lacey Prod. Co.'s Cooper 1, 30-8-11, top chalk 2306 ft 6⅝ cas 2270 ft, hfo wosr, td 2620 ft. Jean Longoria's Belton 1, 31-9-13, sd 1400 ft. Triangle Pet. Co.'s Sabine 2, 36-8-12, dk. D. M. Lide's Ponder 1, 15-7-11, hfo wosr, td 2800 ft; Ponder 2, ne nw 15-7-11, 6⅝ cas 2364 ft, show oil, sd 2420 ft. Jno. Woodley's Sabine 1, ne se 12-8-12, 10-inch 103 ft, 6⅝ cas 2310 ft. H. W. Perritt's Bowman-Hicks 3, 2-7-12, 6⅝ cas 2206 ft, pumping 307 bbls oil day, td 2440 ft; Bowman-Hicks 4, se ne 2-7-12, lcn; Boring 1, ne nw 11-7-12, 10-inch 85 ft, 6-inch 2238 ft, arr test, td 2334 ft. A. H. Thames' Edwards Est. 1, ne se 8-8-13, 10-inch 100 ft, dr 900 ft. R. L. Gay, Tr.'s, Long-Bell Lbr. Co. A-1, ne nw 10-8-13, 12½ cas 105 ft, top marl 1897 ft, base marl 1950 ft, coring 1965 ft, show gas. Jordan Drilling Co. Inc.'s La. Long Leaf 1, sw se 3-7-11, 10-inch 100 ft, 6-inch 2352 ft, flowing 300 bbls day, td 2600 ft. Gautier et al's Marshall 1, se nw 30-8-12, sd 1230 ft, (second hole). Ohio Oil Co.'s Bowman-Hicks 8, nw ne 2-7-12, 10-inch 199 ft, cemtd 6⅝ cas 2200 ft; Bowman-Hicks 9, nw se 35-8-12, lcn; Bowman-Hicks 10 sw ne 35-8-12, lcn; Bowman-Hicks 11, sw se 2-7-12, lcn. Durham Oil Co.'s Polly 1, sw ne 18-8-12, 10-inch 105 ft, 8¼ cas 2087 ft, base chalk 2595 ft, sd 2722 ft. Packard Oil Co.'s Davis 1, sw sw 8-7-10, elev 337 ft, 10-inch 80 ft, 6⅝ cas 2636 ft, top marl 2560 ft, top chalk 2684 ft, sd 2768 ft. Sabine Royalties Co., Inc.'s, Bill Hill 1, nw ne ne 5-7-11, 10-inch 105 ft, top marl 2217 ft, 6-inch cas 2230 ft, 1900 ft oil in hole, wosr, td 2506 ft. Skinner 1, se sw nw 5-8-11, rig. Diffie & Barrett's Lites 1, 34-8-11, 10-inch 105 ft, sd. Natural

Gas Prod. Co.'s Sabine 1, 11-7-12, sp 10-inch 40 ft; Sabine 2, 1-7-12, 6⅝ cas 2382 ft, dry abn, td 2710 ft; Sabine 3, 1-7-12, 6-inch 2222 ft, fsh slip 2250 ft. Hawkins et al's Moran 1, (formerly Byrd 1) se ne 1-7-11, sp 10-inch 100 ft, dr 1700 ft. Lyons & Neely's Baird 1, 1-7-11, 10-inch 100 ft, cemtd 6-inch cas 2410 ft. Texas Co.'s Stille 3, 33-8-11, dk and mov in rig. Houston-Sabine Prod. Co.'s Sabine 1, 36-8-12, lcn.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12, fsh ds 3475 ft.

WEBSTER PARISH—D. M. Coyle's Frazier 1, ne se 27-23-11, dk. Cassidy & Davis' Nickerson 1, ne sw 29-23-10, sd 160 ft. Red Hawk Oil Co.'s Matthews 1, se nw 11-23-9, top chalk 2480 ft, failed to make ds test in bro formation showing oil 2782-97 ft, arr set 6-inch cas, td 2797 ft.

WEST CARROLL PARISH — United Gas Pub. Serv. Co.'s Pioneer Cooperage 1, 29-21-9, rig.

MISSISSIPPI

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Box 1, nw se 11-2n-15e, elev 221 ft, 15½ cas 105 ft, 10-inch 922 ft, top Midway black shale 2205 ft, top Selma chalk 2637 ft, base chalk 3703 ft, dr shale 4116 ft.

CLAY COUNTY—Ohio Oil Co.'s Cantrell 1, ne ne 16-15-5e, elev 270 ft, 13 ⅜ cas 1389 ft, 9⅝ cas 2929 ft, str crooked hole at 3500 ft in hd sandy lime.

CHICKASAW COUNTY — Hightower & Golsan's Fleming 1, 20-13s-3e, wo 6-inch cas td 1505 ft.

COVINGTON COUNTY (Collins Dist.)—Gulf Ref. Co.'s Pope 1, 35-8n-16w, arr res 3000 ft.

GRENADA COUNTY—Carter Oil Co. et al's Dubard 2, 18-22-4e, dk.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet. Inc.'s J. H. Keyes 1, nw ne 21-2n-10e, 15½ cas 104 ft, top Cane River 1090 ft, dr sandy shale strks sand 1230 ft.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, sw ne 2-15-19, sd in brown sand 3007 ft. P. J. McAlpine's Cowart 1, ne sw 2-12-19, 10-inch 694 ft, 8¼ cas 1276 ft, sd wo drill lime 1987 ft. Assoc ated Royalties' School Board 1, sw se 16-15-17, sd 60 ft.

RANKIN COUNTY (Jackson Dist.)—Love et al's Muse 1, se se 32-7-4e, 12½ cas 600 ft, dr lime (Wilcox) 3160 ft (may go to 5000 ft). Love Pet. Co.'s Moore 1, se nw 28-6-2e, sd 900 ft. Millstein O&G Co.'s Gammill-Hartsfield 1, sw ne 6-5-2e, hf fluid, sd wo 2500 ft. Atkisson et al's Valentour 1, nw nw 18-5-2e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw se 9-18n-2e, rig. Dixie Pet. Co.'s Pat Henry 1, se ne 36-17n-4e, sp 12½ cas 120 ft, dr 412 ft. Vicksburg O&G Co.'s Dornbusch 1, sw ne 8-18n-5e, sd 1600 ft.

WINSTON COUNTY (Louisville Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13n-14e, dr red gumbo 2730 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—J. D. Collett et al's Blackmer 2, sw nw 14-11s-4w, 12½ cas 103 ft, 8⅝ cas 2426 ft, recemtd cas, td 2895 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, sw ne 30-20n-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, ta in limey shale 881 ft; Hobson Bros. 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, sd 700 ft.

TENNESSEE

DECATUR COUNTY — Chester County O&G Co.'s Montgomery 1, dr grey lime 2141 ft.

MONTANA

BIG HORN—Continental Oil Co., Lynde 2, se 21-6s-35e, sd 3405 ft.

CARBON—Spomont Pete Co.'s Cruse 1, 32-6s-18e, dr 100 ft.

CASCADE—Andover Oil Co.'s Floweree 1, se 2-21-2w, sd 1405 ft. Lone Star Oil Co.'s McLean 2, se 13-21-3e, spd.

CHOTEAU—Northern State Oil Co.'s Woodward 1, sw 20-14n-24e, ream 6-inch to s.o.w. at 2845 ft. Melton Corp., 24-21n-17e, 5 3/16-inch landed at 2825 ft, dr ahead. Pownam Oil Co., 24-19-11e, fsh at 150 ft. Williston Shelby O&G Co., Flack 1, ream 4-inch to s.o.w., td 2820 ft.

GLACIER—Fulton Pete Corp.'s Blackfeet 1, ne 28-36n-12w, dr 1450 ft. B. & H. O'l Co.'s Haines 1, se 2-34-6w, test oil show 2762 ft. Jeffries-Hoerr's Dawson 1, ne 7-31-12w, resum 3000 ft.

GOLDEN VALLEY—Texas-Pacific's 1, sw 21-8s-21e, hfw 4000 ft. J. F. Dealey et al's 1, ne 28-5n-22e, co.

LIBERTY—Northland O&G Co.'s Yurman 1, 32-33n-5e, dr 3525 ft. Sunburst, McLaren 1, se 9-37-6e, sd 3115 ft. C. G. Howard, Schoonover 1, sw 18-36-6e, dr 600 ft. Perkins, Brown 1, ne 24-35-4e, rig up.

PETROLEUM—Minnesota-Flatwillow, 7-11n-31e, run cas, td 2600 ft.

ROSEBUD—Prairie O&G Co., 1-X, 26-10-39e, wait for slips, td 2415 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co., Sullivan 1, nw 34-27-7w, rig up, mvg in.

TOOLE—Liquid Gold Oil Co.'s Robert 1, ne 25-36-12, fsh tools, gas show 2110 ft, td 2150 ft. International Royalty Holding Co.'s Henry 1, sw 26-35-36, sd 2650 ft. A-1 Pete Co., se 24-36-1e, sd 1555 ft.

YELLOWSTONE—Peter Antonioli, 21-2n-25e, wait cas 1600 ft.

NEW MEXICO

CHAVES.—Warman Oil Trust, Siebert 1, ne 27-13-24, dr 2550 ft. Neal et al, Russell 1, nw 21-14s-25e, dr 1936 ft.

DE BACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, wtg for cas, td 3010 ft.

HARDING—Kummbaca O&G Co., Kerlin 1, se 34-21s-30e, prep to deepen at 287 ft.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10w, stand 6095 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18-9w, sd 3255 ft. Wms. et al's A.T.S.F. 1, se 19-18n-8s, stand 1900 ft. United Kern Pete, Inc., sw 1-18n-11w, lcn. Dysart et al, Dysart 2, ne 14-14n-10w, dr 1456 ft.

MORA — Santa Fe Diox-Ice Co.'s Wagon Hound 1, ne 14-19-21, dr 210 ft.

OTERO—Ernest et al's 1, se 20-25s-7e, wtg for equip at 1005 ft. Pasotero Oil Corp., Dexter 1, nw 22-24s-12e, lcn.

RIO ARRIBA—Berrenger et al's Hartmen 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, se 12-29n-7w, carry 8¼-inch 879 ft.

SAN JUAN—Dorothy Oil Co.'s Terwilliger 2, 29-30-9w, stand 1750 ft. Kutz Canon O&G Co.'s Day 1, se 20-28n-10w, dr 2566 ft. Childers Dr. & Pr. Co.'s Westwater 2, 23-31-16w, prep to res, water trouble at 2490 ft. Rio Grande Dev. Co.'s 2, 9-29-11, dr 1512 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, sdtr lost dr pipe, td 4730 ft. J. B. Witt O&G Co., Mangum 1, se 33-29n-11w, lcn. San Juan Leaseholds Bowman 3, ne 30-30-15, sd 2685 ft. Reserve Oil Co., Reserve 3, se 36-22n-14w, dr at 750 ft. R. C. Oswell et al, nw 34-30n-11w, spdg at 60 ft. Murchison Oil Co., Angels Peak 6, se 34-20n-11w, prep to res at 1730 ft.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, wait 2340 ft. Starr Oil Co.'s Adams 1, ne 25-17-16e, dr 3505 ft. Cibola Pete Co.'s Crown 1, se 9-13n-14e, sd 750 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 12-12n-22e, prep to res 1415 ft. Con-O-Kul Oil's Cherryvale 1, ne 34-17n-21e, dr 465 ft.

TORRANCE—Wms. et al's Staplin 1, ne 16-8n-10e, prep to res 1643 ft. J. B. Witt O&G Co., Kutchem 1, 12-7-7e, dr 1456 ft.

VALENCIA—Acme Oil Co.'s N. M.-Ariz. Land Co.'s 1, 26-6-3, ur to 4958 ft. Harlan et al's Harlan 1-A, 5-6n-2e, dr 6410 ft.

COLORADO

ADAMS—N. M. Slatt's 1, se 27-26-64w, carry 6⅝-inch at 2985 ft.

ARAPAHOE—McDebb Dr. Co.'s Fitzsimons 1, 7-45-55, lost tools at 5800 ft.

BACA—A. R. Jones Oil & Optg. Co., Boice Cattle 1, 22-34-42w, dr 4815 ft.

EL PASO—Utemore Synd., Cannon 1, ne 10-16s-66w, prep to res 1125 ft.

GRAND—Oil Mineral Land, Inc., McElroy 1, sw 14-2n-81w, dr 545 ft.

HUERFANO—Parker Club, Inc., Fee 1, se 4-28s-68w, run 5 3/16-inch cas, td 4116 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-69w, dr 3886 ft.

LAS ANIMAS—Oklahoma Dr. Ass'n, Radcliffe 1, ne 28-28-52, sd 100 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, lcn. Klem Pete Corp.'s Olbert 1, se 9-25n-12w, stand 3125 ft. Murchison Oil Co., Doescher 1, nw 29-33n-12, prep to res 1225 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, to lower 4¾-inch to 3370 ft.

MOFFAT—Mtn. Fuel Supply's State 2, tract 37-12-100, fsh spear 2220 ft. S. H. Keoughan et al's State 1, sw 16-4n-101w, sd 2960 ft.

MONTEZUMA—G. H. Talcott et al's McElmo 1, 7-35n-16w, dr 640 ft. Harlan et al's Carr 2, sw 33-36n-14w, prep to spud.

MONTROSE — Uncompahgre O&G Co.'s Colo. Title & Trust 1, 27-50n-10w, dr 115 ft.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1, ne 16-1n-57w, caving, td 4090 ft.

PUEBLO—Anchor Oil Co.'s Easley 1, sw 35-22s-57w, wtg cas 520 ft.

PARK—So. Park Oil Co.'s Milligan 1, se 13-9s-76w, dr 1836 ft. So. Park O&G Co.'s Easche 1, ne 5-9s-76w, wtg for equip, 1021 ft.

RIO BLANCO—California Co.'s Raden 1, se 30-2n-102w, prep to spud.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4-56, stand 1510 ft.

WELD — Reiter-Foster and Platte Valley Pete Corp., Johnson 1, nw 24-6n-61w, mvg in.

WYOMING

BIG HORN—Westland Oil, Inc., 24-54-95, gs at 150 ft. Wisconsin Holdings, 5-55-97, sd 665 ft. Yellowstone Pete Co.'s 1, 7-87-97, sd 4080 ft.

CARBON—Midwest Refining Co., U. P. 1, 27-11-81, sd 1810 ft. Pete Expl. Co. of Calif., 29-23-89, fsh bit 2535 ft.

CONVERSE—Converse O&G Co., 27-33-72, sd 1410 ft. Pioneer Oil Co., 5-31-70, to dr new test.

FREMONT—Texas Prod. Co.'s State 1, 36-33-95, dr out cem 4485 ft. P. & R. 1, 33-34-92, sd 4906 ft. Yellowstone Oil Co.'s 1, 15-39-92,

dr 600 ft. Ward Oil & Gas Co., 28-34-90, dr 2100 ft. Wiebolt et al, 2-35-99, dr 1300 ft.

JOHNSON—R. C. Tarrant et al, 4-43-82, dr bel 2150 ft.

LINCOLN—Mountain Oil Corp.'s 1, 36-25-116, td 1500 ft. Wyo. Prod. Co., 14-42-113, dr bel 1420 ft, 10-inch cas on bottom.

NATRONA—Summit Oil Co., 21-33n-80w, sd 1220 ft, wait equip. Midwest's 11, nw 32-34n-77, stand 5340 ft. Cuyler Oil Co., 23-36n-85w, re-cem 1250 ft. Golden West Oil Co., 36-36-81, co 1242 ft. Midwest's Midway 1, ne 23-35n-79w, dr 6195 ft.

NIOBRARA—West Virginia Synd., 7-35-62, td 987 ft, cas trouble. Phillips Pete Co., sw se 32-34n-65w, dr 300 ft.

PARK—Resolute Oil Co., 17-57-101, dr 8500 ft, flow by heads.

SWEETWATER—Vermillion Oil Co.'s 1, se 16-12-99, mvg in to resume 3465 ft.

UINTA—Park City O&G Co., nw 6-15-113, dr bel 2400 ft. Doheny Interests, 6-14-118, resum 3216 ft.

WASHAKIE — Dakota-Wyoming Oil Co., ne 24-47-90w, small show 200 ft, to be cased off. Ohio Oil Co., lot 14, 19-45-92, 15½-inch cem at 782 ft, dr water wells.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, prep to cem 15½-inch at 1000 ft.

LETTERS

(*Continued from page 44*)

that the men did not work, and because of the awful monotony that exists in the jungles, uneasiness would take hold of the men and then the mischief began. When repairs would arrive it put one in mind of a bunch of little boys receiving a present from Santa Claus.

Palembang is the most important city in the southern part of Sumatra. It has a population in excess of 100,000, about 2000 of which are Europeans and Americans employed by the two major oil companies and the rubber and coffee interests. The majority of the population is made up of Malays, Chinese and Arabs.

In the northern part of the island are found the Achenese. They have, for the past few years, shown a warlike spirit toward the Dutch government. There have been many officers and soldiers ambushed by them.

My first and only tiger hunt was during the year 1924. While working on the Mambang concession, 250 miles from town, a toolpusher and I were informed by some natives that a tiger had killed one of their cows. The scene of the killing was about one mile from the house. Just before dark we decided to look the situation over, at the same time taking a native with us. The cow was lying in the ditch on one side of the road, and on the opposite side were two large banyon trees. This made an excellent place to watch and try to kill the tiger when he came to feed on the cow. A small lamp was obtained from the village and placed near the cow with the light reflecting away from us. We assumed our positions in the trees and awaited the tiger's appearance. After waiting about 30 minutes we were rewarded by his appearance. The moment that I saw the tiger the toolpusher shot and unfortunately missed, however, we took no chances and retained our posi-

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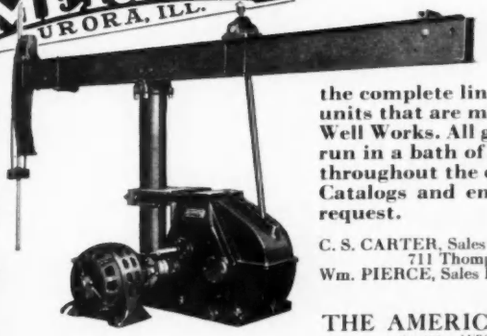

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tions in the tree for some little time before we decided to come down. We could hear no noise in the jungles, so we left and decided to try again the next night. Fortunately, the next day we chanced to get a Ford car with a spotlight on it and again we went to the scene. We placed the car in such a position as to have all the lights showing on the dead cow. Assuming my place in the rear seat with the driver and toolpusher in the front we anxiously awaited the tiger's return. We had not long to wait until I saw the most thrilling sight it has been my pleasure to see. (I say a pleasure, yet at the same time I was not too sure of our safety.) The tiger made one leap out and picked up the cow and started for the jungle. As it did, the other two men shot at it and we got out of the car ready for it if it came out of the jungle at us. I was requested to shoot but I could not see anything to shoot at, but was told to do so to keep him from coming out of the jungle had he been wounded by the first shots. I did not shoot, however, but looked for a place of safety behind the car. After making sure the tiger had gone we entered the jungles and found that it had dropped the cow when they shot. We then went home, feeling quite secure in the fact that the tiger would not come back after the reception he received.

On another occasion we had found that there had been some elephants crossed the railroad track back through the jungle. None of the Americans were very anxious to trail them. At the time there was a young Dutchman working at the same place and he thought he would like to get one. He took the native attendant at the hospital with him and left camp one Thursday. He took neither food nor water with him. On Saturday evening he came staggering into camp very much in need of something to eat and carrying an elephant's ear with him. He brought the ear with him to prove to us Americans that he did kill an elephant.

One evening, wishing to do some reading and to get away from the mosquitoes and bugs, I got into bed and carefully arranged the net over it to see that none got into the bed, and after being comfortably situated for a while, my attention was taken away from the book I was reading to the foot of my mattress where I noticed something black. On close examination, and moving, I saw the object raise its head. Immediately I saw it was a snake about three feet long. I threw a pillow at it and knocked it to the floor. I then got out of bed and killed it. I can assure you, that from then on I gave my

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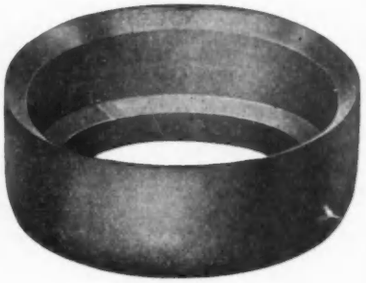

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bed a very careful examination before getting into it. About three weeks later the house boy found another one in it.

On the two most important concessions, Talang Akar and Pendopo, all material is transported to within about 22 miles by water. From there to the warehouses it is transported by the native contractor by Chevrolet trucks, of which he has about 30 in number. If any of the materials, such as a boiler or engine are too heavy for his trucks, the company tranports them on White trucks or with the use of Caterpillar tractors and Athey wagons.

Lee C. Moore and Parkersburg derricks are used exclusively. Ajax and Oil Well Supply and Gumbo Buster drilling engines are used. Cable and rotary tools are both used to great advantage, however, all test wells are generally drilled by cable tools. Oil Well Supply, National and Emsco rotaries are used. Wilson-Snyder, Ideal and Lucey mud hog pumps furnish the means of circulating mud. Gasoline plants are powered exclusively by Cooper-Bessemer twin engines. In the electric lighting plants, Hope gas engines are used. The Talang Akar plant generates 440 volts and the Pendopo plant generating 2300, is to be increased to 13,000.

All houses for the employes are as modern and conveniently arranged as the company can possibly make them. They are electrically equipped, with running water, and the bath room conveniently placed, usually on the main runway from the house to the servants' quarters. Gas is used for cooking. All employes have from one to three servants, usually depending on whether they are married or single.

In addition to the Standard Oil interests there is the Shell company, the largest producer and refiner of petroleum products in the East Indies. It has been stated by newspaper report, however, that Gulf Oil Company has made application for concessions in Borneo.

The geological structure of the mountains and hills is rather complicated. In the western and southern islands, the mountains present the most noted volcanic territory in the world, particularly the island of Java, which has an estimated 60 active volcanoes. In the eastern part of the islands much expanse of the older and in fact some of the oldest formations of igneous rocks (granite, peridotte) are found. There is much of this formation that has been built up of sedimentary and metamorphic rocks such as quartzite, sandstone, marl, limestone and shale.

The composition of the soil is such that its fertility varies to a great extent, depending, however, on the extent to which it has been covered by sediments of the quarternary and volcanic origin. As the soil in many places, such as Java, and Madoera, has been under continuous cultivation for hundreds of years, it no longer offers the same results that newly developed areas do. It is, in many cases, necessary to resort to intensive fertilizing.

H. W. RHINELANDER,
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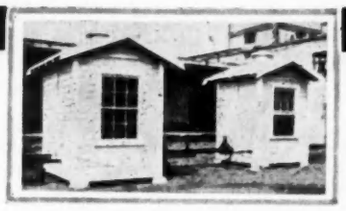

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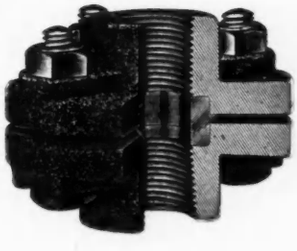

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Well Depth Measuring Device

HALLIBURTON OIL WELL CEMENTING COMPANY

Halliburton Oil Well Cementing Company, Duncan, Oklahoma, has placed on general sale the Halliburton well depth measuring device with the stipulation that it is not to be used in connection with cementing operations in the United States. It is fully covered by patents in foreign countries, the manufacturers state.

This device is not new, having been used in cementing oil wells for a number of years. Only recently, however, has it been available to the oil public. A round steel line takes the place of the flat measuring line, reducing the weight and offering increased accuracy in measuring, and at the same time eliminating considerable friction.

After leaving the reel the line passes entirely around a sheave which is coated around the outside with hard metal. The sheave is of such diameter that when the line is drawn taut around it each revolution of the sheave passes exactly two feet of line. An automatic counter registers each half revolution of the measuring sheave, registering at all times the exact amount of line in the well. By releasing the retainer wheels the line can be removed from the measuring member, making it convenient in connecting up or disconnecting the device from the well.

The reel consists of a measuring line reel with a grooved pulley on one end which can be used for a power drive in deep wells. In drawing the line out of the well a rope can be placed around a grooved pulley and the cat head and the power from the drilling rig, or any other available power used to reel up the line. When the power drive is used the roller bearing type of reel reduces the friction on the bearings. When operated by hand the handle is used to wind up the reel and also to put friction on the reel as a brake in playing the line into the well.

The stuffing box assembly is a device that screws on to the top of the swedge nipple or casing head. It consists of a grooved sheave over which the measuring line passes, various fittings and a stuffing box through which the line can enter the casing without the well fluid coming out. The staff supporting the sheave over which the measuring line runs is swiveled to the stuffing box by means of a yoke supported on two sets of ball bearings and allows the sheave to always maintain accurate alignment with the measuring member when screwing the stuffing box to the fittings at the top of the well, or when the casing tends to twist in handling.

The measuring line weight or bob is a lead weight enclosed in a brass jacket, weighing about 20 pounds. The object of this construction is to enable the accurate following of a cement plug, or determine the exact bottom of a well in heavy fluid mud or cement, and at the same time, should the line break it is composed of soft materials which can easily be drilled up. The brass jacket is hard enough to prevent any considerable wearing of the weight in contact with the casing.

Further information can be obtained from Halliburton Oil Well Cementing Company, Duncan, Oklahoma, or through any supply house.

Halliburton Depth Measuring Device

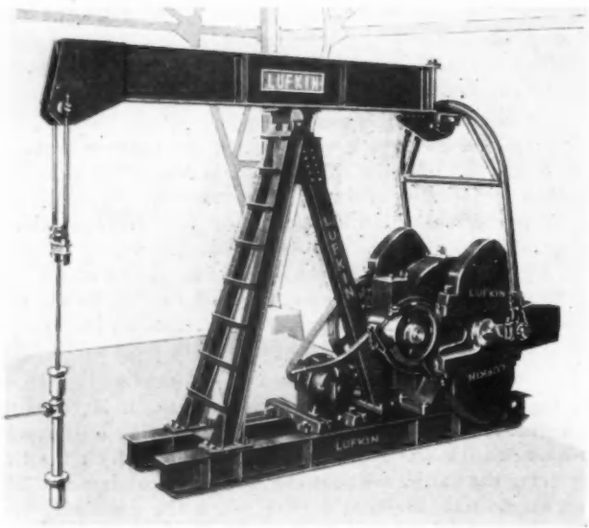
New Lufkin Unit Assembly

LUFKIN FOUNDRY AND MACHINE COMPANY

Lufkin Foundry and Machine Company, Lufkin, Texas, announces the manufacture of the twin-crank pumping unit assembly which, complete in detail from prime mover to polish rod hanger, is mounted upon a reinforced, structural steel bed plate, to fulfill a need for a portable unit for wells of medium depth.

The new Lufkin unit is equipped with Sykes Herringbone continuous tooth gearing (oil bath lubrication) having Hyatt equipped pinion shaft and bronze gear bearings. Equipped with Lufkin-Trout counter-balanced cranks on either side of the gear box all "winding" or "weaving" is eliminated, and also provides additional counter-balancing. The twin-pitman is of reinforced bent-pipe construction

equipped with a universal "ball-joint" connection to the beam to allow for any misalignment and give equal pull for each crank. Trout universal dust-proof, oil-bath (box on pin) pitman connections are regular equipment with the new unit. An adjustable stroke length, the maximum of which is 42 inches, and a stroke speed of from 15 to 28 strokes per minute is obtainable.



The samson post, of tripod design, is bolted to the bed plate with two legs forming a ladder and one a support; the whole providing rigidity and strength for the walking beam which is of the I-beam type equipped with "center-line" connections of "mule head" for straight line pumping.

The new Lufkin twin-crank unit is designed to operate with either electric motor or gas engine drive and is furnished complete with belt and motor house.

Complete details concerning the new unit assembly will be gladly furnished upon request addressed to the Lufkin Foundry and Machine Company, Lufkin, Texas.

C-I-W Bottom Valve

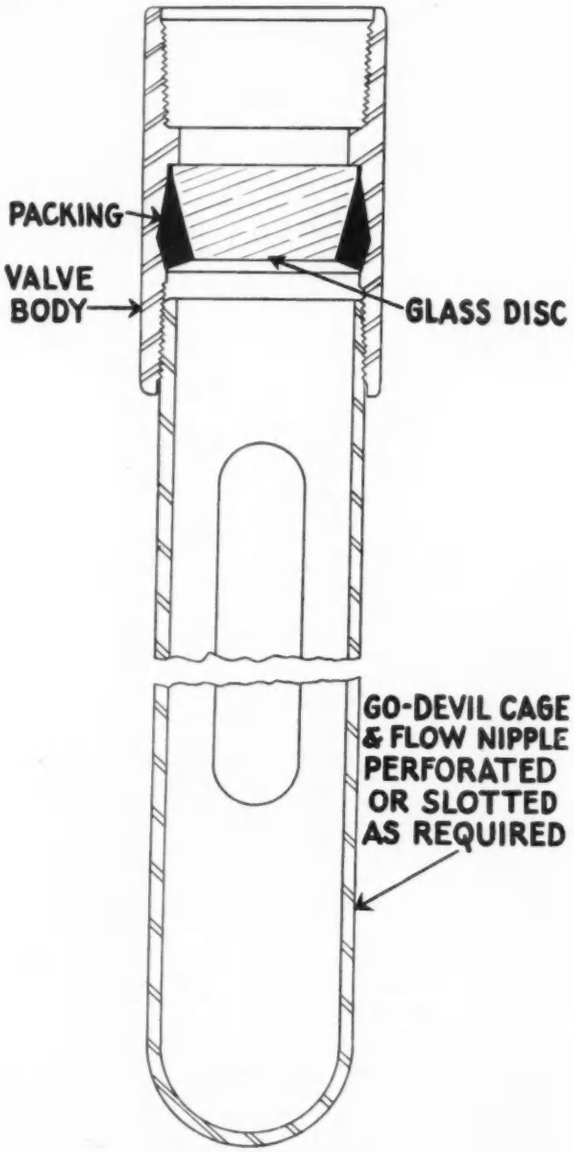
CAMERON IRON WORKS, INC.

Cameron Iron Works, Inc., announces production on the C-I-W bottom valve, a device to make it possible to bring in a low pressure well through the tubing without swabbing. The device is also used for snubbing tubing against high pressures, and for running dry strings of tubing when this is desirable.

In low pressure areas a C-I-W bottom valve is run on the bottom of the string of tubing. When tubing is landed and sealed off at the tubing head, mud pressure is put on the well between the casing and tubing with the mud pumps. Pressure required varies according to conditions. When pressure has been built up, a "go-devil" is dropped into the tubing string through the Christmas tree. This "go-devil" breaks the glass disc, opening the tubing, and permits the built-up pressure around the outside of the tubing to rush up into the dry tubing string. The rush of fluid into the string will cause the well to come in by exerting a pull on the producing sand or formation and permit the well to clean itself without swabbing. After the "go-devil" has broken the glass disc, it is caught below in the "go-devil" cage and not permitted to drop to bottom of the well. This cage can be furnished perforated or slotted as desired.

For snubbing tubing into high pressure wells against pressure, and without loss of oil or gas, the C-I-W bottom valve is adaptable. It is built to withstand any required pressure up to 5000 pounds, and is hydraulic tested before being released from the plant. In extremely high pressure wells, two bottom valves are generally used, one on the bottom of the string, and one about midway of the string, to provide a measure of safety vital in tubing high pressure wells under full control.

C-I-W bottom valves are made in two-inch, 2½-inch, three-inch, and four-inch sizes, threaded as specified. They are furnished to work against any pressures specified up to 5000 pounds, and with or without "go-devil" cage as desired.



C-I-W Bottom Valve

Manufacturer and Supply Dealer Notes

Westinghouse Electric & Manufacturing Company, East Pittsburgh, announces the appointment of J. B. MacNeill as general manager of distribution engineering, to be located in the home office. This group comprises the engineering activities on switchboards, circuit breakers, meters, relays, high tension insulators and lightning arrestors. He is a graduate of Lowell Institute and Massachusetts Institute of Technology, and has been continuously in the employ of the Westinghouse company since 1913. He spent the summer of 1930 reviewing European practice on switchgear and distribution apparatus subsequent to attending the World Power Conference at Berlin as a representative of the National Electrical Manufacturers Association of the United States.

J. B. MacNeill

American Meter Company's publication department has issued an attractive new 36-page revised bulletin on meter provers and cubic foot standards for gas meters manufactured by D. McDonald & Company factory in Albany, New York.

The bulletin includes complete data on the new five and 10-foot provers. The capacity of these models has been respectively increased from 950 to 2300 and from 1800 to 5000 cubic feet per hour at 1½-inch inlet pressure. The booklet further includes instruction for operating provers, cubic foot bottles (both immersion and portable type) apparatus for determining meter capacities, and hydro pneumatic meter testers. A check rate and open rate table, meter proving percentage tables and data on the adjustment of meters to accurate proof, are presented.

International Harvester Company, 606 South Michigan Avenue, Chicago, has issued a large-sized, profusely illustrated catalog entitled "McCormick-Deering Industrial Tractor and Operating Equipment." Various types of this equipment designed for operation by McCormick-Deering power are described and illustrated in the new catalog, and the names of the manufacturers are listed on page 1. The book is divided into sections as listed also on page 1, A to S, inclusive, under headings such as "Air Compressors," "Cabs, Bumpers, and Trucks," "Ditchers," etc. Companies, drilling contractors or individual operators interested in perusing material carried in this catalog may address the company at the address shown above.

Edgar Tobin Aerial Surveys, 1515 Main Avenue, San Antonio, has issued "The Improved Method of Pipe Line Location," an interesting brochure, illustrated with actual photographs of aerial survey work. Copies will be sent on request, to executives and engineers of oil and gas pipe line companies and others interested in pipe line construction.

Byron Jackson Company announces that W. R. Layne has returned to its sales force as petroleum pumping engineer, after an absence of a year. Prior to Layne's connection with this company, he spent five years in the engineering department of Standard Oil Company of California as a pump specialist. He has had six years' experience with Byron Jackson Company as special oil pump engineer, and pioneered the sale of Byron Jackson centrifugal pumps in the Mid-Continent and eastern sections of the United States. Layne will make his headquarters at the factory at Berkeley, California, for the present.

Portable Rig Company, Houston, has appointed Val R. Wittich, 150 Broadway, New York City, export representative.

Toledo Pipe Threading Machine Company, Toledo, Ohio, has recently issued a 92-page catalog known as Catalog "L." It covers the complete line of Toledo pipe tools, listing under the various illustrations the capacities, specifications, operation, a brief description, and prices. An index to equipment carried in the catalog is carried on page 3. A code of the various products listed is carried on pages 85-89, inclusive. The company, upon request, will forward a copy of this catalog to oil company purchasing departments or field shops.

The Borden Company, Warren, Ohio, announces that Alfred F. Howe, who retired from his position of vice-president and general sales manager of this company five years ago, has returned to the company as western sales manager with headquarters at 717 Calmar Avenue, Oakland, California. He will cover the territory on the Pacific Coast and also Nevada and Arizona.

J. I. McDonough, formerly field salesman for T. T. Word Supply Company, has joined Houston Oil Field Material Company as manager of the company's store at Kilgore.

A. W. Waddill, field salesman for Houston Oil Field Material Company, Houston, has been transferred from Refugio to Houston, where he will handle city sales.

J. I. McDonough

A. W. Waddill

Squeaks From the Bull Wheel

▼ ▼ ▼

The Scot, goat of many an anecdote, occasionally turns the tables.

Lord Alness, in his autobiography, tells about an English political meeting. One of the candidates patriotically orated, "I have been born an Englishman, I have lived an Englishman, and I hope I shall die an Englishman."

From the back of the hall, in an unmistakable accent, came the question: "Mon, hae ye no ambeetion?"

The doctor of a country village had two children who were acknowledged by the inhabitants as being the prettiest little girls in the district.

While the children were out walking one day, they happened to pass quite near two small boys; one lived in the village and the other was a visitor.

"I say," said the latter to his friend, "who are those little girls?"

"They are the doctor's children," replied the village boy. "He always keeps the best for himself."

Jack—Why did you break with Alice? I thought you were crazy about her.

Jim—I am, but I decided I couldn't stand it to live with her folks.

"Why is it," asked teacher, "that lightning never strikes twice in the same place?"

"Because," answered Herbert, "after it hits once, the same place ain't there any more."

Rural Doctor (meeting patient)—I've —er—taken the liberty of sending in my little account again.

Patient—Is that so? Well, acting on your advice, I'm avoiding business worries for the present.

Moses met Ikey in the street and said to him, "You're lookin' blue today, Ikey. Vot's troublin' you?"

"I'm bankrupt; that's vot's the matter."

"Bankrupt, eh?" said Moses; "but vot did you settle on your vife?"

"I settled nothing on my vife," said Ikey.

"Vell, vot did you settle on your daughter?"

"I settle nothing on my daughter," groaned Ikey.

"Vy," exclaimed Moses, "you're not bankrupt, you're ruined."

Tommy — "Why do you suppose Adam was created first?"

Dad—"Oh, perhaps to give him a chance to say something."

Clerk—"I have been here 10 years doing three men's work for one man's pay. Now I want a raise."

Manager—"I'm sorry. I can't give you a raise just now, but if you'll tell me who the other two men are I'll discharge them."

Pat—"Be Gorry, and why is Ben wearing the big plaid vest?"

Mike—"And haven't ye heard? The doctor told him to keep a check on his stomach."

"These rugs are the finest obtainable. In material and workmanship they are far superior to all other brands on the market. There is absolutely nothing to touch them at the price."

"What is the price?" the customer inquired.

"Just a moment, madam, and I'll find out for you," said the salesman.

The admiral, who was conducting an examination for the navy, was addressing one of the candidates.

"Who, in your opinion, are the three greatest sailors in British history?" he asked.

"I'm sorry, sir, I didn't catch your name when I entered the room," replied the student, "but the other two are Nelson and Drake."

She had been parked beside a fire hydrant for three hours. As she unlocked the car and got in, a cop who had been waiting for the culprit to show up, sauntered over, stuck his head in the window and remarked very kindly:

"I've been waiting a long time to see you, lady. What's your name?"

She smiled her sweetest, and as she put her foot on the starter replied:

"It wouldn't do you any good if I told you. You look like a nice boy, but my husband is about twice your size and very jealous."

"If I were trying to match politeness," exclaimed the woman, "I should have a difficult job here."

"Let me see your sample, madam," said the shop assistant calmly.

"I took his temperature with that glass thing you gave me, Doctor, and it's gone down."

"Ah, that's right; that means he's getting better."

"Oh, Doctor, are you sure? I mean he's swallowed it."

APPLEMAN GUMBO BITS

When Your Old Bit Gets Flatter'n H---!

change to an **APPLEMAN**

Driller: **"Alright, derrick man, shut your pump down; we've got to come out o' th' hole again."**

Derrick Man: **"What th' H——! Three round trips in one night! We haven't been in th' hole forty-five minutes yet."**

Driller: **"Yeah, I know, but that d—— bit's flatter'n H——!"**

Derrick Man: **"Well, take my advice and finish this hole with a couple of APPLEMANS."**

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The SYFO Clinograph

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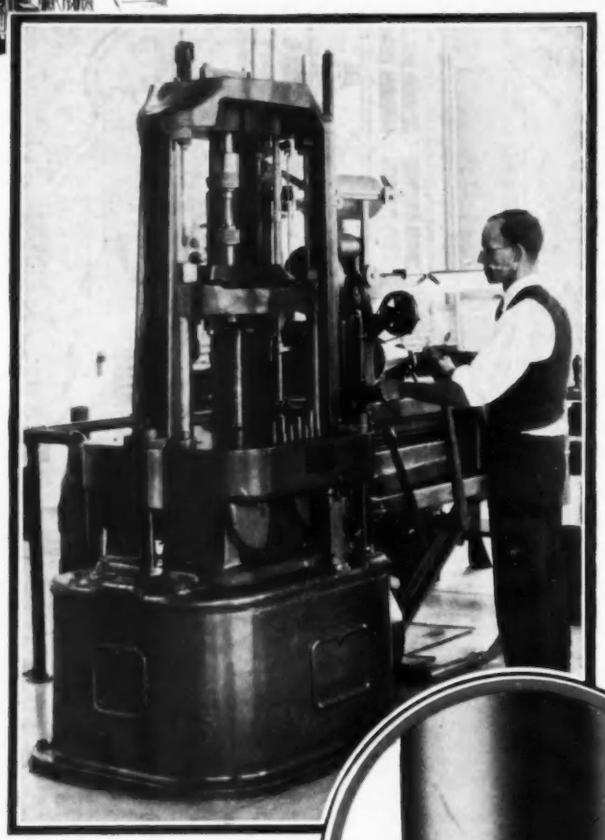

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